



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, N.Y. 10278-0090

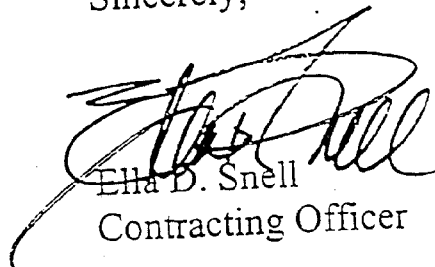
Contracts Branch
Contracting Division

SUBJECT: Central Contractor Registration

TO ALL PROSPECTIVE CONTRACTORS:

Please be advised that it is now required to register with the CCR (Central Contractor Registration) in order to perform work for the Federal Government. For additional information, please refer to the instruction sheet on the back of this letter, which includes the appropriate websites and telephone numbers.

Sincerely,



Ella D. Snell
Contracting Officer

CENTRAL CONTRACTOR REGISTRATION

HTTP://WWW.ACQ.OSD.MIL/EC

1(800) 334-3414

The Central Contractor Registry (CCR) is the Government's new national storing house of commercial and financial information on current and would-be contractors.

CCR eliminates the requirement for current and future contractors to submit Standard Form 129 and provides a single location for registering to conduct business with the Federal Government. Access to the register is available via the World Wide Web. A registration workbook is available for downloading from this site. It is highly recommended you review it prior to processing CCR to ensure all required information is available. Contractors are required to have a DUNS (Data Universal Numbering System) assigned by Dunn & Bradstreet at no charge (call 1-800-333-0505).

The initial Web Site application capability is for the initial contractor registration only. The ability to change, update or cancel a registration and query contractor information via the Web is currently in effect. After submitting a registration, contractors may use the Web application to inquire as to the status of their registration. Typically, a registration will be activated within 48 hours after receiving a complete and accurate application via the Internet. To register via the Internet, go to <http://ccr.edi.disa.mil>. Registration of an applicant through fax or mail may take up to 30 days. The mailing addresses are as follows: For firms with Legal business names beginning with the letters A-K or a number use CCR Registration Assistance Center, 2000 South Loop 256, Suite 11, Palestine, Texas 75801, FAX NO: (903) 729-7988. For firms with Legal business names beginning with the letters L-Z or a number use CCR Registration Assistance Center, 1450 Scalp Avenue, Johnstown, PA. 15904 FAX NO: (814) 262-2326. For those Contractor's who chose to register by mail, a paper registration form can be used and sent or faxed to the appropriate above address who will also furnish the form. Once successfully registered in CCR, a notice will be sent via email, fax, or regular post with information that a Trading Partner Identification Number (TPIN) will soon follow. For CCR implementation and contract questions please contact Robert Cooper at (703) 681-7573.

Anyone may access CCR via the Web to inquire whether vendor is registered at the following site: <http://ccr.edi.disa.mil>.

Information or assistance is available from your local Electronic Commerce Resources Center or Electronic Commerce Information Center at 1-800-334-3414 (8am-8pm), Monday-Friday, except Federal Holidays.

Additionally, your local Procurement Technical Assistance Center (PTAC) employs highly skilled professionals to help businesses like ours earn Federal and State Government contracts; assist with your CCR enrollment. The PTAC can provide Government specifications, daily listings of bid opportunities, bid history and contract award results, training and assistance with Electronic Data Exchange (EDI).

To find the office nearest you, the national PTAC directory can be accessed at Website <http://www.fedmarket.com/tecassis.html>.

RFP MANUAL

**FINAL RFP SUBMISSION
1st BRIGADE BARRACKS
FORT DRUM, NEW YORK
PN 14528**

**Task Order No. 9
Contract No. DACA51-01-D-0021**

**Submitted To:
U.S. Army Corps of Engineers
New York District
26 Federal Plaza, Room 2037
New York, New York 10278-0090
Attn: Frederick F. Hand**

January 9, 2004

**Submitted by:
N.K. BHANDARI, Consulting Engineers, P.C.
1005 West Fayette Street, Suite 4A
Syracuse, New York 13204**

with

**C&S Engineers, Inc.
499 Col. Eileen Collins Boulevard
Syracuse, New York 13212**

NEW YORK DISTRICT
CORPS OF ENGINEERS
NEW YORK, NEW YORK 10278-0090

REQUEST FOR PROPOSAL
FOR
1st BRIGADE BARRACKS

FORT DRUM, NEW YORK

1. Attached is REQUEST FOR PROPOSAL NO. W912DS-04-R-0005
2. BIDS MUST BE SET FORTH full, accurate, and complete information as required by this Invitation for Bids, including attachments. The penalty for making false statements in bids is prescribed under Title 18, United States Code, Section 1001.
3. SUBMISSION OF BIDS: Complete details concerning proper submission of bids are contained in the INSTRUCTIONSTO BIDDERS (Section 00100).
4. Note the REQUIREMENT FOR AFFIRMATIVE ACTION of the EQUAL OPPORTUNITY clause as it applies to the contract resulting from this solicitation. (See paragraph NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY in Section 00700 of this RFP).
5. REPRESENTATIONS AND CERTIFICATIONS – SECTION 00600
Bidders and Offerors are required to complete the REPRESENTATIONS AND CERTIFICATIONS and submit them with their bids.
6. THIS PROJECT IS UNRESTRICTED.

RFP MANUAL
1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

TABLE OF CONTENTS

SPECIFICATIONS:

<u>Section</u>	<u>Title</u>	<u>No. of Pages</u>
00010	SF 1442 and Bidding Schedule	4
00100	Instructions, Conditions and Notice to Bidders	11
00110	Submission Requirements and Instructions	24
00120	Proposal Evaluation and Contract Award	4
00600	Representations and Certifications and Other Statements of Bidders	10
00700	Contract Clauses	39
00800	Special Contract Requirements	38
00900	Wage Rates / Determinations	3
01000	General Requirements	1
01010	Design Requirements	134
01012	Design After Award	22
01312	Quality Control System (QCS)	7
01320	Project Schedule: Network Analysis System	12
01330	Submittal Procedures Design/Build Construction	7
01355	Environmental Protection	15
01356	Storm Water Pollution Prevention Measures	6
01415	Metric Measurements	2
01420	Safety	6
01451	Contractor Quality Control Design-Build Construction	19
01452	Testing for Mechanical and Electrical Systems	4
01525	Safety Requirements	16

ATTACHMENTS

Attachment #1 - Exterior & Interior Color Matrices	4
Attachment #2 - Water Flow Test Data	2
Attachment #3 - Subsurface Investigation Data (Boring Logs)	24
Attachment #4 - Exterior Photographs	4
Attachment #5 - Drawing Index	1
Attachment #6 - Sustainable Design - SPiRiT Rating	40

SOLICITATION, OFFER, AND AWARD <i>(Construction, Alteration, or Repair)</i>	1. SOLICITATION NO. W912DS-04-R-0005	2. TYPE OF SOLICITATION <input type="checkbox"/> SEALED BID (IFB) <input checked="" type="checkbox"/> NEGOTIATED (RFP)	3. DATE ISSUED 16-Jan-2004	PAGE OF PAGES 1 OF 48
IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.				
4. CONTRACT NO.	5. REQUISITION/PURCHASE REQUEST NO. W16ROE-3363-4250		6. PROJECT NO.	
7. ISSUED BY CODE W912DS US ENGINEER DISTRICT, NEW YORK US ARMY CORPS OF ENG, NYD NEW YORK NY 10278 TEL: 212-264-0238 FAX: 212-264-3013		8. ADDRESS OFFER TO <i>(If Other Than Item 7)</i> CODE See Item 7 TEL: FAX:		
9. FOR INFORMATION CALL:	A. NAME	B. TELEPHONE NO. <i>(Include area code)</i> (NO COLLECT CALLS)		
SOLICITATION				
NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".				
10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS <i>(Title, identifying no., date):</i> First Brigade Barracks, Fort Drum, NY THIS PROJECT IS UNRESTRICTED NAICS CODE: 237990, Size Standard: 28.5 million Contract Specialist: Shaukat Syed, (212)264-6707 Project Manager: Phil Favret, (315)772-6745 NOTE NEW REQUIREMENT: BONDS, POWERS OF ATTORNEY, STATEMENTS OF AUTHENTICITY AND CONTINUING VALIDITY, AND ALL RELATED DOCUMENTS MUST NOT BEAR COMPUTER PRINTER GENERATED SIGNATURES AND/OR SEALS. DOCUMENTS BEARING SIGNATURES AND/OR SEALS GENERATED AS PART OF A DOCUMENT, AS OPPOSED TO BEING AFFIXED TO THE DOCUMENT AFTER ITS GENERATION, WILL NOT BE ACCEPTED. SUBMISSION OF SUCH DOCUMENTS MAY RENDER THE BID OR OFFER NON-RESPONSIVE AND INELIGIBLE FOR AWARD. PLEASE REVIEW ALL BONDS AND ACCOMPANYING DOCUMENTS REQUIRED TO BE SUBMITTED.				
11. The Contractor shall begin performance within <u>5</u> calendar days and complete it within <u>920</u> calendar days after receiving <input type="checkbox"/> award, <input checked="" type="checkbox"/> notice to proceed. This performance period is <input checked="" type="checkbox"/> mandatory, <input type="checkbox"/> negotiable. <i>(See _____.)</i>				
12 A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? <i>(If "YES," indicate within how many calendar days after award in Item 12B.)</i> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			12B. CALENDAR DAYS 10	
13. ADDITIONAL SOLICITATION REQUIREMENTS: A. Sealed offers in original and <u>1</u> copies to perform the work required are due at the place specified in Item 8 by 02:00 PM <u>03 Mar 2004</u> <i>(hour)</i> local time <u>03 Mar 2004</u> <i>(date)</i> . If this is a sealed bid solicitation, offers must be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due. B. An offer guarantee <input checked="" type="checkbox"/> is, <input type="checkbox"/> is not required. C. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference. D. Offers providing less than <u>60</u> calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.				

SOLICITATION, OFFER, AND AWARD (Continued) <i>(Construction, Alteration, or Repair)</i>										
OFFER (Must be fully completed by offeror)										
14. NAME AND ADDRESS OF OFFEROR <i>(Include ZIP Code)</i>						15. TELEPHONE NO. <i>(Include area code)</i>				
						16. REMITTANCE ADDRESS <i>(Include only if different than Item 14)</i> See Item 14				
CODE		FACILITY CODE								
17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this offer is accepted by the Government in writing within _____ calendar days after the date offers are due. <i>(Insert any number equal to or greater than the minimum requirements stated in Item 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.)</i>										
AMOUNTS		SEE SCHEDULE OF PRICES								
18. The offeror agrees to furnish any required performance and payment bonds.										
19. ACKNOWLEDGMENT OF AMENDMENTS <i>(The offeror acknowledges receipt of amendments to the solicitation -- give number and date of each)</i>										
AMENDMENT NO.										
DATE										
20A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER <i>(Type or print)</i>						20B. SIGNATURE			20C. OFFER DATE	
AWARD (To be completed by Government)										
21. ITEMS ACCEPTED:										
22. AMOUNT		23. ACCOUNTING AND APPROPRIATION DATA								
24. SUBMIT INVOICES TO ADDRESS SHOWN IN <i>(4 copies unless otherwise specified)</i>				ITEM		25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO <input type="checkbox"/> 10 U.S.C. 2304(c) <input type="checkbox"/> 41 U.S.C. 253(c)				
26. ADMINISTERED BY			CODE		27. PAYMENT WILL BE MADE BY: CODE					
CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE										
<input type="checkbox"/> 28. NEGOTIATED AGREEMENT <i>(Contractor is required to sign this document and return _____ copies to issuing office.)</i> Contractor agrees to furnish and deliver all items or perform all work, requisitions identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications or incorporated by reference in or attached to this contract.						<input type="checkbox"/> 29. AWARD <i>(Contractor is not required to sign this document.)</i> Your offer on this solicitation, is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.				
30A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN <i>(Type or print)</i>						31A. NAME OF CONTRACTING OFFICER <i>(Type or print)</i>				
30B. SIGNATURE			30C. DATE			TEL:		EMAIL:		
						31B. UNITED STATES OF AMERICA BY		31C. AWARD DATE		

Section 00010 - Solicitation Contract Form

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001		1	Dollars, U.S.		
	DESIGN SERVICES				
	ALL WORK TO DESIGN THE FIRST BRIGADE BARRACKS BUILDINGS				

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0002		1	Dollars, U.S.		
	COMPLETE PROJECT CONSTRUCTION COSTS				
	ALL WORK TO CONSTRUCT THE FIRST BRIGADE BARRACKS BUILDING				

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0003		1	Dollars, U.S.	80,000	80,000

PROJECT PUNCH LIST

This line applies to all punch list items including those items identified at the prefinal and final inspections and is above the normal retainage for this item. Offerors shall include this amount in the bid price. This amount shall not be changed. *1

*1 This amount shall be retained by the Government in the event contractor fails to complete punch list items. This amount is separate from liquidated damages to be applied in the event contractor fails to complete the work within the time specified in the contract including any extensions.

NET AMT	80,000
---------	--------

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0004		1	Dollars, U.S.	20,000	20,000

AS-BUILT DRAWINGS PER 00800 SECTION

FOR FIRST BRIGADE BARRACK BUILDING (NO PARTIAL PAYMENTS WILL BE PROVIDED UNTIL FINAL ACCEPTANCE OF THIS ITEM). This amount shall not be changed.

NET AMT	20,000
---------	--------

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0005		1	Dollars, U.S.		

OPTION Option 1

Change all tubs to shower stalls in all modules. (As shown on drawings)

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0006		1	Dollars, U.S.		

OPTION Option 2

Road extension from the last building parking lot entrance of the 1st Brigade area to North Memorial Drive. Including all clearing, grubbing, grading, etc. (As shown on drawing)

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0007		1	Dollars, U.S.		

OPTION Option 3

All Pavilions and grilles, including electrical power to pavilions. (As shown on drawing)

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0008		1	Dollars, U.S.		

OPTION Option 4

All formation areas including basketball courts and walks in court yard area.
Provide grading, topsoil and seeding under the base bid. (As shown on drawings)

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0009		1	Dollars, U.S.		

OPTION Option 5

Water line including hydrants from 4th Street along proposed 4th Armored Division Drive Extension to North Memorial Drive and include the drop down to the buildings. (As shown on drawings)

NET AMT

FOB: Destination

TOTAL BASE BID

TOTAL BASE BID FOR LINE ITEMS 0001- 0004

\$ _____

TOTAL BASE BID PLUS OPTIONS (LINE ITEMS 0001- 0009)

\$ _____

Section 00100 - Bidding Schedule/Instructions to Bidders

BID BOND LANGUAGE

US ARMY ENGINEER DISTRICT, NEW YORK

REQUEST FOR PROPOSAL NO. W912DS-04-R-0005

CHECK LIST FOR OFFERORS

ATTACHED IS RFP NO. W912DS-04-R-0005

Construction of First Brigade Barracks, Fort Drum, N.Y.

ALL INFORMATION REQUIRED BY THE TERMS OF THIS SOLICITATION MUST BE FURNISHED. MISTAKES OR OMISSIONS MAY RENDER YOUR BID INELIGIBLE FOR AWARD. IMPORTANT ITEMS FOR YOU TO CHECK ARE INCLUDED IN BUT NOT LIMITED TO THOSE LISTED BELOW. THIS INFORMATION IS FURNISHED ONLY TO ASSIST YOU IN SUBMITTING A PROPER BID.

 HAVE YOU ACKNOWLEDGED ALL AMENDMENTS?

 HAVE YOU COMPLETED THE "REPRESENTATIONS AND CERTIFICATIONS"
(SECTION 00600) PORTION OF THE SOLICITATION?

 IS YOUR DUNS NUMBER LISTED ON THE STANDARD FORM 1442?

 IS YOUR OFFER PROPERLY SIGNED?

 A BID BOND IS REQUIRED. HAS YOUR SURETY PROVIDED YOU WITH A
BID BOND ON STANDARD FORM 24 (SF 24) OR A SIMILAR FORM
CONTAINING THE SAME LANGUAGE AS A STANDARD FORM 24?

 IS YOUR BID GUARANTEE IN THE PROPER AMOUNT?

 IS YOUR BID GUARANTEE PROPERLY SIGNED BY BOTH THE OFFEROR
AND SURETY AND ARE ALL REQUIRED SEALS AFFIXED?

 DO THE BID BOND AND ACCOMPANYING DOCUMENTS BEAR
SIGNATURES AND SEALS AFFIXED **AFTER** THE DOCUMENT WAS
GENERATED, AS OPPOSED TO COMPUTER PRINTER-GENERATED
SIGNATURES AND/OR SEALS?

 IS THE NAME IN WHICH YOU SUBMITTED THE OFFER THE SAME ON

YOUR OFFER AS ON THE BID BOND?

___ IS YOUR BID BOND INCLUDED WITH YOUR OFFER? (A LATE OFFER GUARANTEE IS TREATED THE SAME AS A LATE OFFER)

___ HAVE YOU ENSURED THAT YOU HAVE NOT RESTRICTED YOUR OFFER BY ALTERING THE PROVISIONS OF THE SOLICITATION?

___ WHEN REQUIRED, HAVE YOU ENTERED A UNIT PRICE FOR EACH BID ITEM? (THE SOLICITATION SPECIFICALLY STATES WHEN THIS IS NECESSARY.)

___ ARE DECIMALS IN YOUR PRICES IN THE PROPER PLACE? ARE YOUR FIGURES LEGIBLE?

___ IF YOU HAVE MADE ERASURES OR CORRECTIONS ON YOUR OFFER, ARE THEY INITIALED BY THE PERSON SIGNING THE OFFER?

___ DOES THE ENVELOPE CONTAINING YOUR OFFER PROPERLY IDENTIFY THAT IT IS A PROPOSAL AND DOES IT CONTAIN THE CORRECT SOLICITATION NUMBER AND TIME OFFERS ARE DUE?

___ WILL YOUR OFFER ARRIVE ON TIME? (SEE PARAGRAPH ENTITLED "LATE SUBMISSIONS, MODIFICATIONS, AND WITHDRAWALS OF BIDS" IN THE INSTRUCTIONS, CONDITIONS, AND NOTICES TO BIDDERS, SECTION 00100 OF THE SOLICITATION.)

NOTE: THERE ARE INCREASED SECURITY MEASURES AT JACOB K. JAVITS FEDERAL BUILDING, 26 FEDERAL PLAZA THAT MAY AFFECT THE TIME IT TAKES TO ENTER THE BUILDING. OFFERORS ARE RESPONSIBLE TO ENSURE THAT ITS OFFER IS SUBMITTED TIMELY.

CLAUSES INCORPORATED BY FULL TEXT

52.204-6 DATA UNIVERSAL NUMBERING SYSTEM (DUNS) NUMBER (OCT 2003)

(a) The offeror shall enter, in the block with its name and address on the cover page of its offer, the annotation "DUNS" or "DUNS+4" followed by the DUNS number or "DUNS+4" that identifies the offeror's name and address exactly as stated in the offer. The DUNS number is a nine-digit number assigned by Dun and Bradstreet, Inc. The DUNS+4 is the DUNS number plus a 4-character suffix that may be assigned at the discretion of the offeror to establish additional CCR records for identifying alternative Electronic Funds Transfer (EFT) accounts (see Subpart 32.11) for the same parent concern.

(b) If the offeror does not have a DUNS number, it should contact Dun and Bradstreet directly to obtain one.

(1) An offeror may obtain a DUNS number--

(i) If located within the United States, by calling Dun and Bradstreet at 1-866-705-5711 or via the Internet at <http://www.dnb.com>; or

(ii) If located outside the United States, by contacting the local Dun and Bradstreet office.

(2) The offeror should be prepared to provide the following information:

(i) Company legal business name.

(ii) Tradestyle, doing business, or other name by which your entity is commonly recognized.

(iii) Company physical street address, city, state and Zip Code.

(iv) Company mailing address, city, state and Zip Code (if separate from physical).

(v) Company telephone number.

(vi) Date the company was started.

(vii) Number of employees at your location.

(viii) Chief executive officer/key manager.

(ix) Line of business (industry).

(x) Company Headquarters name and address (reporting relationship within your entity).

(End of provision)

52.214-4 FALSE STATEMENTS IN BIDS (APR 1984)

Bidders must provide full, accurate, and complete information as required by this solicitation and its attachments. The penalty for making false statements in bids is prescribed in 18 U.S.C. 1001.

(End of provision)

52.214-6 EXPLANATION TO PROSPECTIVE BIDDERS (APR 1984)

Any prospective bidder desiring an explanation or interpretation of the solicitation, drawings, specifications, etc., must request it in writing soon enough to allow a reply to reach all prospective bidders before the submission of their bids. Oral explanations or instructions given before the award of a contract will not be binding. Any information given a prospective bidder concerning a solicitation will be furnished promptly to all other prospective bidders as an amendment to the solicitation, if that information is necessary in submitting bids or if the lack of it would be prejudicial to other prospective bidders.

(End of provision)

52.214-7 LATE SUBMISSIONS, MODIFICATIONS, AND WITHDRAWALS OF BIDS (NOV 1999)

(a) Bidders are responsible for submitting bids, and any modifications or withdrawals, so as to reach the Government office designated in the invitation for bids (IFB) by the time specified in the IFB. If no time is specified in the IFB, the time for receipt is 4:30 p.m., local time, for the designated Government office on the date that bids are due.

(b)(1) Any bid, modification, or withdrawal received at the Government office designated in the IFB after the exact time specified for receipt of bids is "late" and will not be considered unless it is received before award is made, the Contracting Officer determines that accepting the late bid would not unduly delay the acquisition; and--

(i) If it was transmitted through an electronic commerce method authorized by the IFB, it was received at the initial point of entry to the Government infrastructure not later than 5:00 p.m. one working day prior to the date specified for receipt of bids; or

(ii) There is acceptable evidence to establish that it was received at the Government installation designated for receipt of bids and was under the Government's control prior to the time set for receipt of bids.

(2) However, a late modification of an otherwise successful bid that makes its terms more favorable to the Government, will be considered at any time it is received and may be accepted.

(c) Acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of that installation on the bid wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.

(d) If an emergency or unanticipated event interrupts normal Government processes so that bids cannot be received at the Government office designated for receipt of bids by the exact time specified in the IFB and urgent Government requirements preclude amendment of the IFB, the time specified for receipt of bids will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal Government processes resume.

(e) Bids may be withdrawn by written notice received at any time before the exact time set for receipt of bids. If the IFB authorizes facsimile bids, bids may be withdrawn via facsimile received at any time before the exact time set for receipt of bids, subject to the conditions specified in the provision at 52.214-31, Facsimile Bids. A bid may be withdrawn in person by a bidder or its authorized representative if, before the exact time set for receipt of bids, the identity of the person requesting withdrawal is established and the person signs a receipt for the bid.

(End of provision)

52.215-1 INSTRUCTIONS TO OFFERORS--COMPETITIVE ACQUISITION (MAY 2001)

(a) Definitions. As used in this provision--

“Discussions” are negotiations that occur after establishment of the competitive range that may, at the Contracting Officer's discretion, result in the offeror being allowed to revise its proposal.

“In writing or written” means any worded or numbered expression which can be read, reproduced, and later communicated, and includes electronically transmitted and stored information.

“Proposal modification” is a change made to a proposal before the solicitation's closing date and time, or made in response to an amendment, or made to correct a mistake at any time before award.

“Proposal revision” is a change to a proposal made after the solicitation closing date, at the request of or as allowed by a Contracting Officer as the result of negotiations.

“Time”, if stated as a number of days, is calculated using calendar days, unless otherwise specified, and will include Saturdays, Sundays, and legal holidays. However, if the last day falls on a Saturday, Sunday, or legal holiday, then the period shall include the next working day.

(b) Amendments to solicitations. If this solicitation is amended, all terms and conditions that are not amended remain unchanged. Offerors shall acknowledge receipt of any amendment to this solicitation by the date and time specified in the amendment(s).

(c) Submission, modification, revision, and withdrawal of proposals. (1) Unless other methods (e.g., electronic commerce or facsimile) are permitted in the solicitation, proposals and modifications to proposals shall be submitted in paper media in sealed envelopes or packages (i) addressed to the office specified in the solicitation, and (ii) showing the time and date specified for receipt, the solicitation number, and the name and address of the offeror. Offerors using commercial carriers should ensure that the proposal is marked on the outermost wrapper with the information in paragraphs (c)(1)(i) and (c)(1)(ii) of this provision.

(2) The first page of the proposal must show--

(i) The solicitation number;

(ii) The name, address, and telephone and facsimile numbers of the offeror (and electronic address if available);

(iii) A statement specifying the extent of agreement with all terms, conditions, and provisions included in the solicitation and agreement to furnish any or all items upon which prices are offered at the price set opposite each item;

(iv) Names, titles, and telephone and facsimile numbers (and electronic addresses if available) of persons authorized to negotiate on the offeror's behalf with the Government in connection with this solicitation; and

(v) Name, title, and signature of person authorized to sign the proposal. Proposals signed by an agent shall be accompanied by evidence of that agent's authority, unless that evidence has been previously furnished to the issuing office.

(3) Submission, modification, or revision, of proposals.

(i) Offerors are responsible for submitting proposals, and any modifications, or revisions, so as to reach the Government office designated in the solicitation by the time specified in the solicitation. If no time is specified in the

solicitation, the time for receipt is 4:30 p.m., local time, for the designated Government office on the date that proposal or revision is due.

(ii)(A) Any proposal, modification, or revision received at the Government office designated in the solicitation after the exact time specified for receipt of offers is "late" and will not be considered unless it is received before award is made, the Contracting Officer determines that accepting the late offer would not unduly delay the acquisition; and--

(1) If it was transmitted through an electronic commerce method authorized by the solicitation, it was received at the initial point of entry to the Government infrastructure not later than 5:00 p.m. one working day prior to the date specified for receipt of proposals; or

(2) There is acceptable evidence to establish that it was received at the Government installation designated for receipt of offers and was under the Government's control prior to the time set for receipt of offers; or

(3) It is the only proposal received.

(B) However, a late modification of an otherwise successful proposal that makes its terms more favorable to the Government, will be considered at any time it is received and may be accepted.

(iii) Acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of that installation on the proposal wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.

(iv) If an emergency or unanticipated event interrupts normal Government processes so that proposals cannot be received at the office designated for receipt of proposals by the exact time specified in the solicitation, and urgent Government requirements preclude amendment of the solicitation, the time specified for receipt of proposals will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal Government processes resume.

(v) Proposals may be withdrawn by written notice received at any time before award. Oral proposals in response to oral solicitations may be withdrawn orally. If the solicitation authorizes facsimile proposals, proposals may be withdrawn via facsimile received at any time before award, subject to the conditions specified in the provision at 52.215-5, Facsimile Proposals. Proposals may be withdrawn in person by an offeror or an authorized representative, if the identity of the person requesting withdrawal is established and the person signs a receipt for the proposal before award.

(4) Unless otherwise specified in the solicitation, the offeror may propose to provide any item or combination of items.

(5) Offerors shall submit proposals in response to this solicitation in English, unless otherwise permitted by the solicitation, and in U.S. dollars, unless the provision at FAR 52.225-17, Evaluation of Foreign Currency Offers, is included in the solicitation.

(6) Offerors may submit modifications to their proposals at any time before the solicitation closing date and time, and may submit modifications in response to an amendment, or to correct a mistake at any time before award.

(7) Offerors may submit revised proposals only if requested or allowed by the Contracting Officer.

(8) Proposals may be withdrawn at any time before award. Withdrawals are effective upon receipt of notice by the Contracting Officer.

(d) Offer expiration date. Proposals in response to this solicitation will be valid for the number of days specified on the solicitation cover sheet (unless a different period is proposed by the offeror).

(e) Restriction on disclosure and use of data. Offerors that include in their proposals data that they do not want disclosed to the public for any purpose, or used by the Government except for evaluation purposes, shall--

(1) Mark the title page with the following legend: This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed--in whole or in part--for any purpose other than to evaluate this proposal. If, however, a contract is awarded to this offeror as a result of--or in connection with-- the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in sheets [insert numbers or other identification of sheets]; and

(2) Mark each sheet of data it wishes to restrict with the following legend: Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this proposal.

(f) Contract award. (1) The Government intends to award a contract or contracts resulting from this solicitation to the responsible offeror(s) whose proposal(s) represents the best value after evaluation in accordance with the factors and subfactors in the solicitation.

(2) The Government may reject any or all proposals if such action is in the Government's interest.

(3) The Government may waive informalities and minor irregularities in proposals received.

(4) The Government intends to evaluate proposals and award a contract without discussions with offerors (except clarifications as described in FAR 15.306(a)). Therefore, the offeror's initial proposal should contain the offeror's best terms from a cost or price and technical standpoint. The Government reserves the right to conduct discussions if the Contracting Officer later determines them to be necessary. If the Contracting Officer determines that the number of proposals that would otherwise be in the competitive range exceeds the number at which an efficient competition can be conducted, the Contracting Officer may limit the number of proposals in the competitive range to the greatest number that will permit an efficient competition among the most highly rated proposals.

(5) The Government reserves the right to make an award on any item for a quantity less than the quantity offered, at the unit cost or prices offered, unless the offeror specifies otherwise in the proposal.

(6) The Government reserves the right to make multiple awards if, after considering the additional administrative costs, it is in the Government's best interest to do so.

(7) Exchanges with offerors after receipt of a proposal do not constitute a rejection or counteroffer by the Government.

(8) The Government may determine that a proposal is unacceptable if the prices proposed are materially unbalanced between line items or subline items. Unbalanced pricing exists when, despite an acceptable total evaluated price, the price of one or more contract line items is significantly overstated or understated as indicated by the application of cost or price analysis techniques. A proposal may be rejected if the Contracting Officer determines that the lack of balance poses an unacceptable risk to the Government.

(9) If a cost realism analysis is performed, cost realism may be considered by the source selection authority in evaluating performance or schedule risk.

(10) A written award or acceptance of proposal mailed or otherwise furnished to the successful offeror within the time specified in the proposal shall result in a binding contract without further action by either party.

(11) The Government may disclose the following information in postaward debriefings to other offerors:

- (i) The overall evaluated cost or price and technical rating of the successful offeror;
- (ii) The overall ranking of all offerors, when any ranking was developed by the agency during source selection;
- (iii) A summary of the rationale for award; and
- (iv) For acquisitions of commercial items, the make and model of the item to be delivered by the successful offeror.

(End of provision)

52.233-2 SERVICE OF PROTEST (AUG 1996)

(a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from **Chief, Contract Division, 26 Federal Plaza, Room 1843, New York, NY 10278**

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

(End of provision)

52.236-27 SITE VISIT (CONSTRUCTION) (FEB 1995)

(a) The clauses at 52.236-2, Differing Site Conditions, and 52.236-3, Site Investigations and Conditions Affecting the Work, will be included in any contract awarded as a result of this solicitation. Accordingly, offerors or quoters are urged and expected to inspect the site where the work will be performed.

(b) Site visits may be arranged during normal duty hours by contacting:

Name: Phil Favret

Address: **4895 Nininger Street, Fort Drum, NY 13602**

Telephone: **315-772-6745**

(End of provision)

52.236-28 PREPARATION OF PROPOSALS--CONSTRUCTION (OCT 1997)

(a) Proposals must be (1) submitted on the forms furnished by the Government or on copies of those forms, and (2) manually signed. The person signing a proposal must initial each erasure or change appearing on any proposal form.

(b) The proposal form may require offerors to submit proposed prices for one or more items on various bases, including--

(1) Lump sum price;

(2) Alternate prices;

(3) Units of construction; or

(4) Any combination of paragraphs (b)(1) through (b)(3) of this provision.

(c) If the solicitation requires submission of a proposal on all items, failure to do so may result in the proposal being rejected without further consideration. If a proposal on all items is not required, offerors should insert the words “no proposal” in the space provided for any item on which no price is submitted.

(d) Alternate proposals will not be considered unless this solicitation authorizes their submission.

(End of provision)

252.204-7004 REQUIRED CENTRAL CONTRACTOR REGISTRATION ALTERNATE A (NOV 2003)

(a) Definitions. As used in this clause--

“Central Contractor Registration (CCR) database” means the primary Government repository for contractor information required for the conduct of business with the Government.

“Commercial and Government Entity (CAGE) code” means--

(1) A code assigned by the Defense Logistics Information Service (DLIS) to identify a commercial or Government entity; or

(2) A code assigned by a member of the North Atlantic Treaty Organization that DLIS records and maintains in the CAGE master file. This type of code is known as an “NCAGE code.”

“Data Universal Numbering System (DUNS) number” means the 9-digit number assigned by Dun and Bradstreet, Inc. (D&B) to identify unique business entities.

“Data Universal Numbering System +4 (DUNS+4) number” means the DUNS number assigned by D&B plus a 4-character suffix that may be assigned by a business concern. (D&B has no affiliation with this 4-character suffix.) This 4-character suffix may be assigned at the discretion of the business concern to establish additional CCR records for identifying alternative Electronic Funds Transfer (EFT) accounts (see Subpart 32.11 of the Federal Acquisition Regulation) for the same parent concern.

“Registered in the CCR database” means that--

(1) The Contractor has entered all mandatory information, including the DUNS number or the DUNS+4 number, into the CCR database;

(2) The Contractor's CAGE code is in the CCR database; and

(3) The Government has validated all mandatory data fields and has marked the records “Active.”

(b)(1) By submission of an offer, the offeror acknowledges the requirement that a prospective awardee shall be registered in the CCR database prior to award, during performance, and through final payment of any contract, basic agreement, basic ordering agreement, or blanket purchasing agreement resulting from this solicitation.

(2) The offeror shall enter, in the block with its name and address on the cover page of its offer, the annotation "DUNS" or "DUNS +4" followed by the DUNS or DUNS +4 number that identifies the offeror's name and address exactly as stated in the offer. The DUNS number will be used by the Contracting Officer to verify that the offeror is registered in the CCR database.

(c) If the offeror does not have a DUNS number, it should contact Dun and Bradstreet directly to obtain one.

(1) An offeror may obtain a DUNS number--

(i) If located within the United States, by calling Dun and Bradstreet at 1-866-705-5711 or via the Internet at <http://www.dnb.com>; or

(ii) If located outside the United States, by contacting the local Dun and Bradstreet office.

(2) The offeror should be prepared to provide the following information:

(i) Company legal business.

(ii) Tradestyle, doing business, or other name by which your entity is commonly recognized.

(iii) Company Physical Street Address, City, State, and Zip Code.

(iv) Company Mailing Address, City, State and Zip Code (if separate from physical).

(v) Company Telephone Number.

(vi) Date the company was started.

(vii) Number of employees at your location.

(viii) Chief executive officer/key manager.

(ix) Line of business (industry).

(x) Company Headquarters name and address (reporting relationship within your entity).

(d) If the Offeror does not become registered in the CCR database in the time prescribed by the Contracting Officer, the Contracting Officer will proceed to award to the next otherwise successful registered Offeror.

(e) Processing time, which normally takes 48 hours, should be taken into consideration when registering. Offerors who are not registered should consider applying for registration immediately upon receipt of this solicitation.

(f) The Contractor is responsible for the accuracy and completeness of the data within the CCR database, and for any liability resulting from the Government's reliance on inaccurate or incomplete data. To remain registered in the CCR database after the initial registration, the Contractor is required to review and update on an annual basis from the date of initial registration or subsequent updates its information in the CCR database to ensure it is current, accurate and complete. Updating information in the CCR does not alter the terms and conditions of this contract and is not a substitute for a properly executed contractual document.

(g)(1)(i) If a Contractor has legally changed its business name, "doing business as" name, or division name (whichever is shown on the contract), or has transferred the assets used in performing the contract, but has not completed the necessary requirements regarding novation and change-of-name agreements in Subpart 42.12, the Contractor shall provide the responsible Contracting Officer a minimum of one business day's written notification of

its intention to (A) change the name in the CCR database; (B) comply with the requirements of Subpart 42.12 of the FAR; and (C) agree in writing to the timeline and procedures specified by the responsible Contracting Officer. The Contractor must provide with the notification sufficient documentation to support the legally changed name.

(ii) If the Contractor fails to comply with the requirements of paragraph (g)(1)(i) of this clause, or fails to perform the agreement at paragraph (g)(1)(i)(C) of this clause, and, in the absence of a properly executed novation or change-of-name agreement, the CCR information that shows the Contractor to be other than the Contractor indicated in the contract will be considered to be incorrect information within the meaning of the "Suspension of Payment" paragraph of the electronic funds transfer (EFT) clause of this contract.

(2) The Contractor shall not change the name or address for EFT payments or manual payments, as appropriate, in the CCR record to reflect an assignee for the purpose of assignment of claims (see FAR Subpart 32.8, Assignment of Claims). Assignees shall be separately registered in the CCR database. Information provided to the Contractor's CCR record that indicates payments, including those made by EFT, to an ultimate recipient other than that Contractor will be considered to be incorrect information within the meaning of the "Suspension of payment" paragraph of the EFT clause of this contract.

(h) Offerors and Contractors may obtain information on registration and annual confirmation requirements via the internet at <http://www.ccr.gov> or by calling 1-888-227-2423, or 269-961-5757.

(End of clause)

Section 00600 - Representations & Certifications

CLAUSES INCORPORATED BY FULL TEXT

52.203-2 CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (APR 1985)

(a) The offeror certifies that --

(1) The prices in this offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other offeror or competitor relating to --

(i) Those prices,

(ii) The intention to submit an offer, or

(iii) The methods of factors used to calculate the prices offered:

(2) The prices in this offer have not been and will not be knowingly disclosed by the offeror, directly or indirectly, to any other offeror or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the offeror to induce any other concern to submit or not to submit an offer for the purpose of restricting competition.

(b) Each signature on the offer is considered to be a certification by the signatory that the signatory --

(1) Is the person in the offeror's organization responsible for determining the prices offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) of this provision; or

(2) (i) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) of this provision _____ (insert full name of person(s) in the offeror's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the offeror's organization);

(ii) As an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) As an agent, has not personally participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) of this provision.

(c) If the offeror deletes or modifies subparagraph (a)(2) of this provision, the offeror must furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure.

(End of clause)

52.203-11 CERTIFICATION AND DISCLOSURE REGARDING PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (APR 1991)

(a) The definitions and prohibitions contained in the clause, at FAR 52.203-12, Limitation on Payments to Influence Certain Federal Transactions, included in this solicitation, are hereby incorporated by reference in paragraph (b) of this Certification.

(b) The offeror, by signing its offer, hereby certifies to the best of his or her knowledge and belief that on or after December 23, 1989,--

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan, or cooperative agreement;

(2) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress or an employee of a Member of Congress on his or her behalf in connection with this solicitation, the offeror shall complete and submit, with its offer, OMB standard form LLL, Disclosure of Lobbying Activities, to the Contracting Officer; and

(3) He or she will include the language of this certification in all subcontract awards at any tier and require that all recipients of subcontract awards in excess of \$100,000 shall certify and disclose accordingly.

(1) Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by section 1352, title 31, United States Code. Any person who makes an expenditure prohibited under this provision, shall be subject to a civil penalty of not less than \$10,000, and not more than \$100,000, for each such failure.

(End of provision)

52.204-3 TAXPAYER IDENTIFICATION (OCT 1998)

(a) Definitions.

“Common parent,” as used in this provision, means that corporate entity that owns or controls an affiliated group of corporations that files its Federal income tax returns on a consolidated basis, and of which the offeror is a member.

“Taxpayer Identification Number (TIN),” as used in this provision, means the number required by the Internal Revenue Service (IRS) to be used by the offeror in reporting income tax and other returns. The TIN may be either a Social Security Number or an Employer Identification Number.

(b) All offerors must submit the information required in paragraphs (d) through (f) of this provision to comply with debt collection requirements of 31 U.S.C. 7701(c) and 3325(d), reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M, and implementing regulations issued by the IRS. If the resulting contract is subject to the payment reporting requirements described in Federal Acquisition Regulation (FAR) 4.904, the failure or refusal by the offeror to furnish the information may result in a 31 percent reduction of payments otherwise due under the contract.

(c) The TIN may be used by the Government to collect and report on any delinquent amounts arising out of the offeror's relationship with the Government (31 U.S.C. 7701(c)(3)). If the resulting contract is subject to the payment reporting requirements described in FAR 4.904, the TIN provided hereunder may be matched with IRS records to verify the accuracy of the offeror's TIN.

(d) Taxpayer Identification Number (TIN).

___ TIN:_____

___ TIN has been applied for.

___ TIN is not required because:

___ Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;

___ Offeror is an agency or instrumentality of a foreign government;

___ Offeror is an agency or instrumentality of the Federal Government.

(e) Type of organization.

___ Sole proprietorship;

___ Partnership;

___ Corporate entity (not tax-exempt);

___ Corporate entity (tax-exempt);

___ Government entity (Federal, State, or local);

___ Foreign government;

___ International organization per 26 CFR 1.6049-4;

___ Other _____

(f) Common parent.

___ Offeror is not owned or controlled by a common parent as defined in paragraph (a) of this provision.

___ Name and TIN of common parent:

Name _____

TIN _____

(End of provision)

52.204-5 WOMEN-OWNED BUSINESS (OTHER THAN SMALL BUSINESS) (MAY 1999)

(a) Definition. Women-owned business concern, as used in this provision, means a concern that is at least 51 percent owned by one or more women; or in the case of any publicly owned business, at least 51 percent of its stock is owned by one or more women; and whose management and daily business operations are controlled by one or more women.

(b) Representation. [Complete only if the offeror is a women-owned business concern and has not represented itself as a small business concern in paragraph (b)(1) of FAR 52.219-1, Small Business Program Representations, of this solicitation.] The offeror represents that it () is a women-owned business concern.

(End of provision)

52.209-5 CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (DEC 2001)

(a)(1) The Offeror certifies, to the best of its knowledge and belief, that-

(i) The Offeror and/or any of its Principals -

(A) Are () are not () presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(B) Have () have not (), within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

(C) Are () are not () presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph (a)(1)(i)(B) of this provision.

(ii) The Offeror has () has not (), within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

(2) "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

This Certification Concerns a Matter Within the Jurisdiction of an Agency of the United States and the Making of a False, Fictitious, or Fraudulent Certification May Render the Maker Subject to Prosecution Under Section 1001, Title 18, United States Code.

(b) The Offeror shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Offeror's responsibility. Failure of the Offeror to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Offeror nonresponsible.

(d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an Offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was

placed when making award. If it is later determined that the Offeror knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

(End of provision)

52.215-6 PLACE OF PERFORMANCE (OCT 1997)

(a) The offeror or respondent, in the performance of any contract resulting from this solicitation, () intends, () does not intend (check applicable block) to use one or more plants or facilities located at a different address from the address of the offeror or respondent as indicated in this proposal or response to request for information.

(b) If the offeror or respondent checks “intends” in paragraph (a) of this provision, it shall insert in the following spaces the required information:

Place of Performance(Street Address, City, State, County, Zip Code)	Name and Address of Owner and Operator of the Plant or Facility if Other Than Offeror or Respondent

(End of provision)

52.219-1 SMALL BUSINESS PROGRAM REPRESENTATIONS (APR 2002)

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is 237990.

(2) The small business size standard is 28.5 million.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b) Representations. (1) The offeror represents as part of its offer that it () is, () is not a small business concern.

(2) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents, for general statistical purposes, that it () is, () is not a small disadvantaged business concern as defined in 13 CFR 124.1002.

(3) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it () is, () is not a women-owned small business concern.

(4) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it () is, () is not a veteran-owned small business concern.

(5) (Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (b)(4) of this provision.) The offeror represents as part of its offer that it () is, () is not a service-disabled veteran-owned small business concern.

(6) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.)
The offeror represents, as part of its offer, that--

(i) It () is, () is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal office, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR part 126; and

(ii) It () is, () is not a joint venture that complies with the requirements of 13 CFR part 126, and the representation in paragraph (b)(6)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating in the joint venture. (The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture:_____.) Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(c) Definitions. As used in this provision--

Service-disabled veteran-owned small business concern--

(1) Means a small business concern--

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

"Small business concern," means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR Part 121 and the size standard in paragraph (a) of this provision.

Veteran-owned small business concern means a small business concern--

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

"Women-owned small business concern," means a small business concern --

(1) That is at least 51 percent owned by one or more women; in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

(d) Notice.

(1) If this solicitation is for supplies and has been set aside, in whole or in part, for small business concerns, then the clause in this solicitation providing notice of the set-aside contains restrictions on the source of the end items to be furnished.

(2) Under 15 U.S.C. 645(d), any person who misrepresents a firm's status as a small, HUBZone small, small disadvantaged, or women-owned small business concern in order to obtain a contract to be awarded under the preference programs established pursuant to section 8(a), 8(d), 9, or 15 of the Small Business Act or any other provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall--

(i) Be punished by imposition of fine, imprisonment, or both;

(ii) Be subject to administrative remedies, including suspension and debarment; and

(iii) Be ineligible for participation in programs conducted under the authority of the Act.

(End of provision)

52.219-2 EQUAL LOW BIDS. (OCT 1995)

(a) This provision applies to small business concerns only.

(b) The bidder's status as a labor surplus area (LSA) concern may affect entitlement to award in case of tie bids. If the bidder wishes to be considered for this priority, the bidder must identify, in the following space, the LSA in which the costs to be incurred on account of manufacturing or production (by the bidder or the first-tier subcontractors) amount to more than 50 percent of the contract price.

(c) Failure to identify the labor surplus area as specified in paragraph (b) of this provision will preclude the bidder from receiving priority consideration. If the bidder is awarded a contract as a result of receiving priority consideration under this provision and would not have otherwise received award, the bidder shall perform the contract or cause the contract to be performed in accordance with the obligations of an LSA concern.

52.219-22 SMALL DISADVANTAGED BUSINESS STATUS (OCT 1999)

(a) General. This provision is used to assess an offeror's small disadvantaged business status for the purpose of obtaining a benefit on this solicitation. Status as a small business and status as a small disadvantaged business for general statistical purposes is covered by the provision at FAR 52.219-1, Small Business Program Representation.

(b) Representations.

(1) General. The offeror represents, as part of its offer, that it is a small business under the size standard applicable to this acquisition; and either--

____ (i) It has received certification by the Small Business Administration as a small disadvantaged business concern consistent with 13 CFR 124, Subpart B; and

(A) No material change in disadvantaged ownership and control has occurred since its certification;

(B) Where the concern is owned by one or more disadvantaged individuals, the net worth of each individual upon whom the certification is based does not exceed \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and

(C) It is identified, on the date of this representation, as a certified small disadvantaged business concern in the database maintained by the Small Business Administration (PRO0Net); or

____ (ii) It has submitted a completed application to the Small Business Administration or a Private Certifier to be certified as a small disadvantaged business concern in accordance with 13 CFR 124, Subpart B, and a decision on that application is pending, and that no material change in disadvantaged ownership and control has occurred since its application was submitted.

(2)____ For Joint Ventures. The offeror represents, as part of its offer, that it is a joint venture that complies with the requirements at 13 CFR 124.1002(f) and that the representation in paragraph (b)(1) of this provision is accurate for the small disadvantaged business concern that is participating in the joint venture. [The offeror shall enter the name of the small disadvantaged business concern that is participating in the joint venture: _____.]

(c) Penalties and Remedies. Anyone who misrepresents any aspects of the disadvantaged status of a concern for the purposes of securing a contract or subcontract shall:

(1) Be punished by imposition of a fine, imprisonment, or both;

(2) Be subject to administrative remedies, including suspension and debarment; and

(3) Be ineligible for participation in programs conducted under the authority of the Small Business Act.

(End of provision)

52.223-13 CERTIFICATION OF TOXIC CHEMICAL RELEASE REPORTING (AUG 2003)

(a) Executive Order 13148, of April 21, 2000, Greening the Government through Leadership in Environmental Management, requires submission of this certification as a prerequisite for contract award.

(b) By signing this offer, the offeror certifies that--

(1) As the owner or operator of facilities that will be used in the performance of this contract that are subject to the filing and reporting requirements described in section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023) and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106), the offeror will file and continue to file for such facilities for the life of the contract the Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of EPCRA and section 6607 of PPA; or

(2) None of its owned or operated facilities to be used in the performance of this contract is subject to the Form R filing and reporting requirements because each such facility is exempt for at least one of the following reasons:
(Check each block that is applicable.)

() (i) The facility does not manufacture, process, or otherwise use any toxic chemicals listed in 40 CFR 372.65;

() (ii) The facility does not have 10 or more full-time employees as specified in section 313.(b)(1)(A) of EPCRA 42 U.S.C. 11023(b)(1)(A);

() (iii) The facility does not meet the reporting thresholds of toxic chemicals established under section 313(f) of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

() (iv) The facility does not fall within the following Standard Industrial Classification (SIC) codes or their corresponding North American Industry Classification System sectors:

(A) Major group code 10 (except 1011, 1081, and 1094.

(B) Major group code 12 (except 1241).

(C) Major group codes 20 through 39.

(D) Industry code 4911, 4931, or 4939 (limited to facilities that combust coal and/or oil for the purpose of generating power for distribution in commerce).

(E) Industry code 4953 (limited to facilities regulated under the Resource Conservation and Recovery Act, Subtitle C (42 U.S.C. 6921, et seq.), 5169, 5171, or 7389 (limited to facilities primarily engaged in solvent recovery services on a contract or fee basis); or

() (v) The facility is not located within the United States or its outlying areas.

(End of clause)

52.230-1 COST ACCOUNTING STANDARDS NOTICES AND CERTIFICATION (JUN 2000)

Note: This notice does not apply to small businesses or foreign governments. This notice is in three parts, identified by Roman numerals I through III.

Offerors shall examine each part and provide the requested information in order to determine Cost Accounting Standards (CAS) requirements applicable to any resultant contract.

If the offeror is an educational institution, Part II does not apply unless the contemplated contract will be subject to full or modified CAS coverage pursuant to 48 CFR 9903.201-2(c)(5) or 9903.201-2(c)(6), respectively.

I. DISCLOSURE STATEMENT--COST ACCOUNTING PRACTICES AND CERTIFICATION

(a) Any contract in excess of \$500,000 resulting from this solicitation will be subject to the requirements of the Cost Accounting Standards Board (48 CFR Chapter 99), except for those contracts which are exempt as specified in 48 CFR 9903.201-1.

(b) Any offeror submitting a proposal which, if accepted, will result in a contract subject to the requirements of 48 CFR Chapter 99 must, as a condition of contracting, submit a Disclosure Statement as required by 48 CFR 9903.202. When required, the Disclosure Statement must be submitted as a part of the offeror's proposal under this solicitation unless the offeror has already submitted a Disclosure Statement disclosing the practices used in connection with the pricing of this proposal. If an applicable Disclosure Statement has already been submitted, the offeror may satisfy the requirement for submission by providing the information requested in paragraph (c) of Part I of this provision.

CAUTION: In the absence of specific regulations or agreement, a practice disclosed in a Disclosure Statement shall not, by virtue of such disclosure, be deemed to be a proper, approved, or agreed-to practice for pricing proposals or accumulating and reporting contract performance cost data.

(c) Check the appropriate box below:

(1) Certificate of Concurrent Submission of Disclosure Statement.

The offeror hereby certifies that, as a part of the offer, copies of the Disclosure Statement have been submitted as follows: (i) original and one copy to the cognizant Administrative Contracting Officer (ACO) or cognizant Federal agency official authorized to act in that capacity (Federal official), as applicable, and (ii) one copy to the cognizant Federal auditor.

(Disclosure must be on Form No. CASB DS-1 or CASB DS-2, as applicable. Forms may be obtained from the cognizant ACO or Federal official and/or from the loose-leaf version of the Federal Acquisition Regulation.)

Date of Disclosure Statement: _____ Name and Address of Cognizant ACO or Federal Official Where Filed: _____

The offeror further certifies that the practices used in estimating costs in pricing this proposal are consistent with the cost accounting practices disclosed in the Disclosure Statement.

(2) Certificate of Previously Submitted Disclosure Statement.

The offeror hereby certifies that the required Disclosure Statement was filed as follows:

Date of Disclosure Statement: _____ Name and Address of Cognizant ACO or Federal Official Where Filed: _____

The offeror further certifies that the practices used in estimating costs in pricing this proposal are consistent with the cost accounting practices disclosed in the applicable Disclosure Statement.

(3) Certificate of Monetary Exemption.

The offeror hereby certifies that the offeror, together with all divisions, subsidiaries, and affiliates under common control, did not receive net awards of negotiated prime contracts and subcontracts subject to CAS totaling more than \$50 million (of which at least one award exceeded \$1 million) in the cost accounting period immediately preceding the period in which this proposal was submitted. The offeror further certifies that if such status changes before an award resulting from this proposal, the offeror will advise the Contracting Officer immediately.

(4) Certificate of Interim Exemption.

The offeror hereby certifies that (i) the offeror first exceeded the monetary exemption for disclosure, as defined in (3) of this subsection, in the cost accounting period immediately preceding the period in which this offer was submitted and (ii) in accordance with 48 CFR 9903.202-1, the offeror is not yet required to submit a Disclosure Statement. The offeror further certifies that if an award resulting from this proposal has not been made within 90 days after the end of that period, the offeror will immediately submit a revised certificate to the Contracting Officer, in the form specified under subparagraph (c)(1) or (c)(2) of Part I of this provision, as appropriate, to verify submission of a completed Disclosure Statement.

CAUTION: Offerors currently required to disclose because they were awarded a CAS-covered prime contract or subcontract of \$50 million or more in the current cost accounting period may not claim this exemption (4). Further, the exemption applies only in connection with proposals submitted before expiration of the 90-day period following the cost accounting period in which the monetary exemption was exceeded.

II. COST ACCOUNTING STANDARDS--ELIGIBILITY FOR MODIFIED CONTRACT COVERAGE

If the offeror is eligible to use the modified provisions of 48 CFR 9903.201-2(b) and elects to do so, the offeror shall indicate by checking the box below. Checking the box below shall mean that the resultant contract is subject to the Disclosure and Consistency of Cost Accounting Practices clause in lieu of the Cost Accounting Standards clause.

☐ The offeror hereby claims an exemption from the Cost Accounting Standards clause under the provisions of 48 CFR 9903.201-2(b) and certifies that the offeror is eligible for use of the Disclosure and Consistency of Cost Accounting Practices clause because during the cost accounting period immediately preceding the period in which this proposal was submitted, the offeror received less than \$50 million in awards of CAS-covered prime contracts and subcontracts. The offeror further certifies that if such status changes before an award resulting from this proposal, the offeror will advise the Contracting Officer immediately.

CAUTION: An offeror may not claim the above eligibility for modified contract coverage if this proposal is expected to result in the award of a CAS-covered contract of \$50 million or more or if, during its current cost accounting period, the offeror has been awarded a single CAS-covered prime contract or subcontract of \$25 million or more.

III. ADDITIONAL COST ACCOUNTING STANDARDS APPLICABLE TO EXISTING CONTRACTS

The offeror shall indicate below whether award of the contemplated contract would, in accordance with subparagraph (a)(3) of the Cost Accounting Standards clause, require a change in established cost accounting practices affecting existing contracts and subcontracts.

☐ YES ☐ NO

(End of clause)

ADDITIONAL INFORMATION

THE NEXT SECTION CONTAINS SECTION 00700, ENTITLED “CONTRACT CLAUSES”. SOME CLAUSES MIGHT HAVE ADDITIONAL INFORMATION OR EXPANSION; THEREFORE OFFERORS SHOULD ALSO REFER TO SECTION 00800, ENTITLED “SPECIAL CONTRACT REQUIREMENTS OF TECHNICAL SPECIFICATIONS.

Section 00700 - Contract Clauses

CLAUSES INCORPORATED BY REFERENCE

52.202-1 Alt I	Definitions (Dec 2001) --Alternate I	MAY 2001
52.203-5	Covenant Against Contingent Fees	APR 1984
52.203-6	Restrictions On Subcontractor Sales To The Government	JUL 1995
52.203-7	Anti-Kickback Procedures	JUL 1995
52.203-8	Cancellation, Rescission, and Recovery of Funds for Illegal or Improper Activity	JAN 1997
52.203-10	Price Or Fee Adjustment For Illegal Or Improper Activity	JAN 1997
52.203-12	Limitation On Payments To Influence Certain Federal Transactions	JUN 2003
52.204-2	Security Requirements	AUG 1996
52.204-4	Printed or Copied Double-Sided on Recycled Paper	AUG 2000
52.211-10	Commencement, Prosecution, and Completion of Work	APR 1984
52.211-12	Liquidated Damages--Construction	SEP 2000
52.211-13	Time Extensions	SEP 2000
52.215-10	Price Reduction for Defective Cost or Pricing Data	OCT 1997
52.215-11	Price Reduction for Defective Cost or Pricing Data--Modifications	OCT 1997
52.215-12	Subcontractor Cost or Pricing Data	OCT 1997
52.215-20	Requirements for Cost or Pricing Data or Information Other Than Cost or Pricing Data	OCT 1997
52.215-21	Requirements for Cost or Pricing Data or Information Other Than Cost or Pricing Data--Modifications	OCT 1997
52.217-5	Evaluation Of Options	JUL 1990
52.219-8	Utilization of Small Business Concerns	OCT 2000
52.222-24	Preaward On-Site Equal Opportunity Compliance Evaluation	FEB 1999
52.223-3	Hazardous Material Identification And Material Safety Data	JAN 1997
52.227-14	Rights in Data--General	JUN 1987
52.228-1	Bid Guarantee	SEP 1996
52.228-5	Insurance - Work On A Government Installation	JAN 1997
52.232-5	Payments under Fixed-Price Construction Contracts	SEP 2002
52.232-27	Prompt Payment for Construction Contracts	OCT 2003
52.233-1	Disputes	JUL 2002
52.233-3	Protest After Award	AUG 1996
52.236-1	Performance of Work by the Contractor	APR 1984
52.236-4	Physical Data	APR 1984
52.236-5	Material and Workmanship	APR 1984
52.236-6	Superintendence by the Contractor	APR 1984
52.236-7	Permits and Responsibilities	NOV 1991
52.236-8	Other Contracts	APR 1984
52.236-9	Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements	APR 1984
52.236-10	Operations and Storage Areas	APR 1984
52.236-11	Use and Possession Prior to Completion	APR 1984
52.236-13	Accident Prevention	NOV 1991
52.236-15	Schedules for Construction Contracts	APR 1984
52.236-16	Quantity Surveys	APR 1984
52.236-17	Layout of Work	APR 1984
52.236-21	Specifications and Drawings for Construction	FEB 1997

52.236-26	Preconstruction Conference	FEB 1995
52.242-13	Bankruptcy	JUL 1995
52.242-14	Suspension of Work	APR 1984
52.243-4	Changes	AUG 1987
52.244-6	Subcontracts for Commercial Items	APR 2003
52.245-3	Identification of Government-Furnished Property	APR 1984
52.246-12	Inspection of Construction	AUG 1996
52.246-21	Warranty of Construction	MAR 1994
52.247-34	F.O.B. Destination	NOV 1991
52.249-2 Alt I	Termination for Convenience of the Government (Fixed-Price) (Sep 1996) - Alternate I	SEP 1996
52.249-10	Default (Fixed-Price Construction)	APR 1984
52.253-1	Computer Generated Forms	JAN 1991
252.203-7001	Prohibition On Persons Convicted of Fraud or Other Defense- Contract-Related Felonies	MAR 1999
252.204-7003	Control Of Government Personnel Work Product	APR 1992
252.205-7000	Provision Of Information To Cooperative Agreement Holders	DEC 1991
252.209-7000	Acquisition From Subcontractors Subject To On-Site Inspection Under The Intermediate Range Nuclear Forces (INF) Treaty	NOV 1995
252.209-7004	Subcontracting With Firms That Are Owned or Controlled By The Government of a Terrorist Country	MAR 1998
252.215-7000	Pricing Adjustments	DEC 1991
252.219-7003	Small, Small Disadvantaged and Women-Owned Small Business Subcontracting Plan (DOD Contracts)	APR 1996
252.225-7012	Preference For Certain Domestic Commodities	FEB 2003
252.225-7031	Secondary Arab Boycott Of Israel	APR 2003
252.227-7022	Government Rights (Unlimited)	MAR 1979
252.227-7023	Drawings and Other Data to become Property of Government	MAR 1979
252.236-7000	Modification Proposals -Price Breakdown	DEC 1991
252.236-7001	Contract Drawings, Maps, and Specifications	AUG 2000
252.236-7008	Contract Prices-Bidding Schedules	DEC 1991
252.243-7002	Requests for Equitable Adjustment	MAR 1998
252.244-7000	Subcontracts for Commercial Items and Commercial Components (DoD Contracts)	MAR 2000

CLAUSES INCORPORATED BY FULL TEXT

52.204-1 APPROVAL OF CONTRACT (DEC 1989)

This contract is subject to the written approval of **Contracting Officer** and shall not be binding until so approved.

(End of clause)

52.216-1 TYPE OF CONTRACT (APR 1984)

The Government contemplates award of a **Firm-Fixed Contract** resulting from this solicitation.

(End of clause)

52.219-4 NOTICE OF PRICE EVALUATION PREFERENCE FOR HUBZONE SMALL BUSINESS CONCERNS (JAN 1999)

(a) Definition. HUBZone small business concern, as used in this clause, means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

(b) Evaluation preference. (1) Offers will be evaluated by adding a factor of 10 percent to the price of all offers, except-

(i) Offers from HUBZone small business concerns that have not waived the evaluation preference;

(ii) Otherwise successful offers from small business concerns;

(iii) Otherwise successful offers of eligible products under the Trade Agreements Act when the dollar threshold for application of the Act is exceeded (see 25.402 of the Federal Acquisition Regulation (FAR)); and

(iv) Otherwise successful offers where application of the factor would be inconsistent with a Memorandum of Understanding or other international agreement with a foreign government.

(2) The factor of 10 percent shall be applied on a line item basis or to any group of items on which award may be made. Other evaluation factors described in the solicitation shall be applied before application of the factor.

(3) A concern that is both a HUBZone small business concern and a small disadvantaged business concern will receive the benefit of both the HUBZone small business price evaluation preference and the small disadvantaged business price evaluation adjustment (see FAR clause 52.219-23). Each applicable price evaluation preference or adjustment shall be calculated independently against an offeror's base offer.

These individual preference amounts shall be added together to arrive at the total evaluated price for that offer.

(c) Waiver of evaluation preference. A HUBZone small business concern may elect to waive the evaluation preference, in which case the factor will be added to its offer for evaluation purposes. The agreements in paragraph (d) of this clause do not apply if the offeror has waived the evaluation preference.

___ Offeror elects to waive the evaluation preference.

(d) Agreement. A HUBZone small business concern agrees that in the performance of the contract, in the case of a contract for

(1) Services (except construction), at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern or employees of other HUBZone small business concerns;

(2) Supplies (other than procurement from a nonmanufacturer of such supplies), at least 50 percent of the cost of manufacturing, excluding the cost of materials, will be performed by the concern or other HUBZone small business concerns;

(3) General construction, at least 15 percent of the cost of the contract performance incurred for personnel will be will be spent on the concern's employees or the employees of other HUBZone small business concerns; or

(4) Construction by special trade contractors, at least 25 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns.

(e) A HUBZone joint venture agrees that in the performance of the contract, the applicable percentage specified in paragraph (d) of this clause will be performed by the HUBZone small business participant or participants.

(f) A HUBZone small business concern nonmanufacturer agrees to furnish in performing this contract only end items manufactured or produced by HUBZone small business manufacturer concerns. This paragraph does not apply in connection with construction or service contracts.

(End of clause)

52.222-22 PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (FEB 1999)

The offeror represents that --

(a) () It has, () has not participated in a previous contract or subcontract subject to the Equal Opportunity clause of this solicitation;

(b) () It has, () has not, filed all required compliance reports; and

(c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards.

(End of provision)

52.222-23 NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (FEB 1999)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation for each trade	Goals for female participation for each trade
2.5%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and

women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the --

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is **Fort Drum, NY**.
(End of provision)

52.222-26 EQUAL OPPORTUNITY (APR 2002)

(a) Definition. United States, as used in this clause, means the 50 States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, and Wake Island.

(b) If, during any 12-month period (including the 12 months preceding the award of this contract), the Contractor has been or is awarded nonexempt Federal contracts and/or subcontracts that have an aggregate value in excess of \$10,000, the Contractor shall comply with paragraphs (b)(1) through (b)(11) of this clause, except for work performed outside the United States by employees who were not recruited within the United States. Upon request, the Contractor shall provide information necessary to determine the applicability of this clause.

(1) The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. However, it shall not be a violation of this clause for the Contractor to extend a publicly announced preference in employment to Indians living on or near an Indian reservation, in connection with employment opportunities on or near an Indian reservation, as permitted by 41 CFR 60-1.5.

(2) The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. This shall include, but not be limited to, (i) employment, (ii) upgrading, (iii) demotion, (iv) transfer, (v) recruitment or recruitment advertising, (vi) layoff or termination, (vii) rates of pay or other forms of compensation, and (viii) selection for training, including apprenticeship.

(3) The Contractor shall post in conspicuous places available to employees and applicants for employment the notices to be provided by the Contracting Officer that explain this clause.

(4) The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(5) The Contractor shall send, to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, the notice to be provided by the Contracting Officer advising the labor union or workers' representative of the Contractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.

(6) The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.

(7) The Contractor shall furnish to the contracting agency all information required by Executive Order 11246, as amended, and by the rules, regulations, and orders of the Secretary of Labor. The Contractor shall also file Standard Form 100 (EEO-1), or any successor form, as prescribed in 41 CFR part 60-1. Unless the Contractor has filed within the 12 months preceding the date of contract award, the Contractor shall, within 30 days after contract award, apply to either the regional Office of Federal Contract Compliance Programs (OFCCP) or the local office of the Equal Employment Opportunity Commission for the necessary forms.

(8) The Contractor shall permit access to its premises, during normal business hours, by the contracting agency or the OFCCP for the purpose of conducting on-site compliance evaluations and complaint investigations. The Contractor shall permit the Government to inspect and copy any books, accounts, records (including computerized records), and other material that may be relevant to the matter under investigation and pertinent to compliance with Executive Order 11246, as amended, and rules and regulations that implement the Executive Order.

(9) If the OFCCP determines that the Contractor is not in compliance with this clause or any rule, regulation, or order of the Secretary of Labor, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts, under the procedures authorized in Executive Order 11246, as amended. In addition, sanctions may be imposed and remedies invoked against the Contractor as provided in Executive Order 11246, as amended; in the rules, regulations, and orders of the Secretary of Labor; or as otherwise provided by law.

(10) The Contractor shall include the terms and conditions of subparagraphs (b)(1) through (11) of this clause in every subcontract or purchase order that is not exempted by the rules, regulations, or orders of the Secretary of Labor issued under Executive Order 11246, as amended, so that these terms and conditions will be binding upon each subcontractor or vendor.

(11) The Contractor shall take such action with respect to any subcontract or purchase order as the contracting officer may direct as a means of enforcing these terms and conditions, including sanctions for noncompliance; provided, that if the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of any direction, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

(c) Notwithstanding any other clause in this contract, disputes relative to this clause will be governed by the procedures in 41 CFR 60-1.1.

(End of clause)

52.228-15 PERFORMANCE AND PAYMENT BONDS--CONSTRUCTION (JUL 2000)-

(a) Definitions. As used in this clause--

Original contract price means the award price of the contract; or, for requirements contracts, the price payable for the estimated total quantity; or, for indefinite-quantity contracts, the price payable for the specified minimum quantity.

Original contract price does not include the price of any options, except those options exercised at the time of contract award.

(b) Amount of required bonds. Unless the resulting contract price is \$100,000 or less, the successful offeror shall furnish performance and payment bonds to the Contracting Officer as follows:

(1) Performance bonds (Standard Form 25). The penal amount of performance bonds at the time of contract award shall be 100 percent of the original contract price.

(2) Payment Bonds (Standard Form 25-A). The penal amount of payment bonds at the time of contract award shall be 100 percent of the original contract price.

(3) Additional bond protection. (i) The Government may require additional performance and payment bond protection if the contract price is increased. The increase in protection generally will equal 100 percent of the increase in contract price.

(ii) The Government may secure the additional protection by directing the Contractor to increase the penal amount of the existing bond or to obtain an additional bond.

(c) Furnishing executed bonds. The Contractor shall furnish all executed bonds, including any necessary reinsurance agreements, to the Contracting Officer, within the time period specified in the Bid Guarantee provision of the solicitation, or otherwise specified by the Contracting Officer, but in any event, before starting work.

(d) Surety or other security for bonds. The bonds shall be in the form of firm commitment, supported by corporate sureties whose names appear on the list contained in Treasury Department Circular 570, individual sureties, or by other acceptable security such as postal money order, certified check, cashier's check, irrevocable letter of credit, or, in accordance with Treasury Department regulations, certain bonds or notes of the United States. Treasury Circular 570 is published in the Federal Register or may be obtained from the U.S. Department of Treasury, Financial Management Service, Surety Bond Branch, 401 14th Street, NW, 2nd Floor, West Wing, Washington, DC 20227.

(e) Notice of subcontractor waiver of protection (40 U.S.C. 270b(c)). Any waiver of the right to sue on the payment bond is void unless it is in writing, signed by the person whose right is waived, and executed after such person has first furnished labor or material for use in the performance of the contract.

(End of clause)

52.231-5000 EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE MAR 1995)--EFARS

(a) This clause does not apply to terminations. See 52.249-5000, Basis for Settlement of Proposals and FAR Part 49.

(b) Allowable cost for construction and marine plant and equipment in sound workable condition owned or controlled and furnished by a contractor or subcontractor at any tier shall be based on actual cost data for each piece of equipment or groups of similar serial and series for which the Government can determine both ownership and operating costs from the contractor's accounting records. When both ownership and operating costs cannot be determined for any piece of equipment or groups of similar serial or series equipment from the contractor's accounting records, costs for that equipment shall be based upon the applicable provisions of EP 1110-1-8, Construction Equipment Ownership and Operating Expense Schedule, Region _____. Working conditions shall be considered to be average for determining equipment rates using the schedule

unless specified otherwise by the contracting officer. For equipment not included in the schedule, rates for comparable pieces of equipment may be used or a rate may be developed using the formula provided in the schedule. For forward pricing, the schedule in effect at the time of negotiations shall apply. For retroactive pricing, the schedule in effect at the time the work was performed shall apply.

(c) Equipment rental costs are allowable, subject to the provisions of FAR 31.105(d)(ii) and FAR 31.205-36. Rates for equipment rented from an organization under common control, lease-purchase arrangements, and sale-leaseback arrangements, will be determined using the schedule, except that actual rates will be used for equipment leased from an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated lessees.

(d) When actual equipment costs are proposed and the total amount of the pricing action exceeds the small purchase threshold, the contracting officer shall request the contractor to submit either certified cost or pricing data, or partial/limited data, as appropriate. The data shall be submitted on Standard Form 1411, Contract Pricing Proposal Cover Sheet.

(End of clause)

52.232-16 PROGRESS PAYMENTS (APR 2003)

The Government will make progress payments to the Contractor when requested as work progresses, but not more frequently than monthly, in amounts of \$2,500 or more approved by the Contracting Officer, under the following conditions:

(a) Computation of amounts. (1) Unless the Contractor requests a smaller amount, the Government will compute each progress payment as 80 percent of the Contractor's total costs incurred under this contract whether or not actually paid, plus financing payments to subcontractors (see paragraph (j) of this clause), less the sum of all previous progress payments made by the Government under this contract. The Contracting Officer will consider cost of money that would be allowable under FAR 31.205-10 as an incurred cost for progress payment purposes.

(2) The amount of financing and other payments for supplies and services purchased directly for the contract are limited to the amounts that have been paid by cash, check, or other forms of payment, or that are determined due and will be paid to subcontractors--

(i) In accordance with the terms and conditions of a subcontract or invoice; and

(ii) Ordinarily within 30 days of the submission of the Contractor's payment request to the Government.

(3) The Government will exclude accrued costs of Contractor contributions under employee pension plans until actually paid unless--

(i) The Contractor's practice is to make contributions to the retirement fund quarterly or more frequently; and

(ii) The contribution does not remain unpaid 30 days after the end of the applicable quarter or shorter payment period (any contribution remaining unpaid shall be excluded from the Contractor's total costs for progress payments until paid).

(4) The Contractor shall not include the following in total costs for progress payment purposes in paragraph (a)(1) of this clause:

(i) Costs that are not reasonable, allocable to this contract, and consistent with sound and generally accepted accounting principles and practices.

(ii) Costs incurred by subcontractors or suppliers.

(iii) Costs ordinarily capitalized and subject to depreciation or amortization except for the properly depreciated or amortized portion of such costs.

(iv) Payments made or amounts payable to subcontractors or suppliers, except for --

(A) completed work, including partial deliveries, to which the Contractor has acquired title; and

(B) Work under cost-reimbursement or time-and-material subcontracts to which the Contractor has acquired title.

(5) The amount of unliquidated progress payments may exceed neither (i) the progress payments made against incomplete work (including allowable unliquidated progress payments to subcontractors) nor

(ii) the value, for progress payment purposes, of the incomplete work. Incomplete work shall be considered to be the supplies and services required by this contract, for which delivery and invoicing by the Contractor and acceptance by the Government are incomplete.

(6) The total amount of progress payments shall not exceed 80 percent of the total contract price.

(7) If a progress payment or the unliquidated progress payments exceed the amounts permitted by subparagraphs (a)(4) or (a)(5) above, the Contractor shall repay the amount of such excess to the Government on demand.

(8) Notwithstanding any other terms of the contract, the Contractor agrees not to request progress payments in dollar amounts of less than \$2,500. The Contracting Officer may make exceptions.

(b) Liquidation. Except as provided in the Termination for Convenience of the Government clause, all progress payments shall be liquidated by deducting from any payment under this contract, other than advance or progress payments, the unliquidated progress payments, or 80 percent of the amount invoiced, whichever is less. The Contractor shall repay to the Government any amounts required by a retroactive price reduction, after computing liquidations and payments on past invoices at the reduced prices and adjusting the unliquidated progress payments accordingly. The Government reserves the right to unilaterally change from the ordinary liquidation rate to an alternate rate when deemed appropriate for proper contract financing.

(c) Reduction or suspension. The Contracting Officer may reduce or suspend progress payments, increase the rate of liquidation, or take a combination of these actions, after finding on substantial evidence any of the following conditions:

(1) The Contractor failed to comply with any material requirement of this contract (which includes paragraphs (f) and (g) below).

(2) Performance of this contract is endangered by the Contractor's

(i) failure to make progress or

(ii) unsatisfactory financial condition.

(3) Inventory allocated to this contract substantially exceeds reasonable requirements.

(4) The Contractor is delinquent in payment of the costs of performing this contract in the ordinary course of business.

(5) The unliquidated progress payments exceed the fair value of the work accomplished on the undelivered portion of this contract.

(6) The Contractor is realizing less profit than that reflected in the establishment of any alternate liquidation rate in paragraph (b) above, and that rate is less than the progress payment rate stated in subparagraph (a)(1) above.

(d) Title.

(1) Title to the property described in this paragraph (d) shall vest in the Government. Vestiture shall be immediately upon the date of this contract, for property acquired or produced before that date. Otherwise, vestiture shall occur when the property is or should have been allocable or properly chargeable to this contract.

(2) "Property," as used in this clause, includes all of the below-described items acquired or produced by the Contractor that are or should be allocable or properly chargeable to this contract under sound and generally accepted accounting principles and practices.

(i) Parts, materials, inventories, and work in process;

(ii) Special tooling and special test equipment to which the Government is to acquire title under any other clause of this contract;

(iii) Nondurable (i.e., noncapital) tools, jigs, dies, fixtures, molds, patterns, taps, gauges, test equipment, and other similar manufacturing aids, title to which would not be obtained as special tooling under subparagraph (ii) above; and

(iv) Drawings and technical data, to the extent the Contractor or subcontractors are required to deliver them to the Government by other clauses of this contract.

(3) Although title to property is in the Government under this clause, other applicable clauses of this contract; e.g., the termination or special tooling clauses, shall determine the handling and disposition of the property.

(4) The Contractor may sell any scrap resulting from production under this contract without requesting the Contracting Officer's approval, but the proceeds shall be credited against the costs of performance.

(5) To acquire for its own use or dispose of property to which title is vested in the Government under this clause, the Contractor must obtain the Contracting Officer's advance approval of the action and the terms. The Contractor shall (i) exclude the allocable costs of the property from the costs of contract performance, and (ii) repay to the Government any amount of unliquidated progress payments allocable to the property. Repayment may be by cash or credit memorandum.

(6) When the Contractor completes all of the obligations under this contract, including liquidation of all progress payments, title shall vest in the Contractor for all property (or the proceeds thereof) not--

(i) Delivered to, and accepted by, the Government under this contract; or

(ii) Incorporated in supplies delivered to, and accepted by, the Government under this contract and to which title is vested in the Government under this clause.

(7) The terms of this contract concerning liability for Government-furnished property shall not apply to property to which the Government acquired title solely under this clause.

(e) Risk of loss. Before delivery to and acceptance by the Government, the Contractor shall bear the risk of loss for property, the title to which vests in the Government under this clause, except to the extent the Government expressly assumes the risk. The Contractor shall repay the Government an amount equal to the unliquidated progress payments that are based on costs allocable to property that is damaged, lost, stolen, or destroyed.

(f) Control of costs and property. The Contractor shall maintain an accounting system and controls adequate for the proper administration of this clause.

(g) Reports and access to records. The Contractor shall promptly furnish reports, certificates, financial statements, and other pertinent information reasonably requested by the Contracting Officer for the administration of this clause. Also, the Contractor shall give the Government reasonable opportunity to examine and verify the Contractor's books, records, and accounts.

(h) Special terms regarding default. If this contract is terminated under the Default clause, (i) the Contractor shall, on demand, repay to the Government the amount of unliquidated progress payments and (ii) title shall vest in the Contractor, on full liquidation of progress payments, for all property for which the Government elects not to require delivery under the Default clause. The Government shall be liable for no payment except as provided by the Default clause.

(i) Reservations of rights. (1) No payment or vesting of title under this clause shall (i) excuse the Contractor from performance of obligations under this contract or (ii) constitute a waiver of any of the rights or remedies of the parties under the contract.

(2) The Government's rights and remedies under this clause

(i) Shall not be exclusive but rather shall be in addition to any other rights and remedies provided by law or this contract and

(ii) Shall not be affected by delayed, partial, or omitted exercise of any right, remedy, power, or privilege, nor shall such exercise or any single exercise preclude or impair any further exercise under this clause or the exercise of any other right, power, or privilege of the Government.

(j) Financing payments to subcontractors. The financing payments to subcontractors mentioned in paragraphs (a)(1) and (a)(2) of this clause shall be all financing payments to subcontractors or divisions, if the following conditions are met:

(1) The amounts included are limited to--

(i) The unliquidated remainder of financing payments made; plus

(ii) Any unpaid subcontractor requests for financing payments.

(2) The subcontract or interdivisional order is expected to involve a minimum of approximately 6 months between the beginning of work and the first delivery; or, if the subcontractor is a small business concern, 4 months.

(3) If the financing payments are in the form of progress payments, the terms of the subcontract or interdivisional order concerning progress payments--

(i) Are substantially similar to the terms of this clause for any subcontractor that is a large business concern, or this clause with its Alternate I for any subcontractor that is a small business concern;

(ii) Are at least as favorable to the Government as the terms of this clause;

(iii) Are not more favorable to the subcontractor or division than the terms of this clause are to the Contractor;

(iv) Are in conformance with the requirements of FAR 32.504(e); and

(v) Subordinate all subcontractor rights concerning property to which the Government has title under the subcontract to the Government's right to require delivery of the property to the Government if--

(A) The Contractor defaults; or

(B) The subcontractor becomes bankrupt or insolvent.

(4) If the financing payments are in the form of performance-based payments, the terms of the subcontract or interdivisional order concerning payments--

(i) Are substantially similar to the Performance-Based Payments clause at FAR 52.232-32 and meet the criteria for, and definition of, performance-based payments in FAR Part 32;

(ii) Are in conformance with the requirements of FAR 32.504(f); and

(iii) Subordinate all subcontractor rights concerning property to which the Government has title under the subcontract to the Government's right to require delivery of the property to the Government if--

(A) The Contractor defaults; or

(B) The subcontractor becomes bankrupt or insolvent.

(5) If the financing payments are in the form of commercial item financing payments, the terms of the subcontract or interdivisional order concerning payments--

(i) Are constructed in accordance with FAR 32.206(c) and included in a subcontract for a commercial item purchase that meets the definition and standards for acquisition of commercial items in FAR Parts 2 and 12;

(ii) Are in conformance with the requirements of FAR 32.504(g); and

(iii) Subordinate all subcontractor rights concerning property to which the Government has title under the subcontract to the Government's right to require delivery of the property to the Government if--

(A) The Contractor defaults; or

(B) The subcontractor becomes bankrupt or insolvent.

(6) If financing is in the form of progress payments, the progress payment rate in the subcontract is the customary rate used by the contracting agency, depending on whether the subcontractor is or is not a small business concern.

(7) Concerning any proceeds received by the Government for property to which title has vested in the Government under the subcontract terms, the parties agree that the proceeds shall be applied to reducing any unliquidated financing payments by the Government to the Contractor under this contract.

(8) If no unliquidated financing payments to the Contractor remain, but there are unliquidated financing payments that the Contractor has made to any subcontractor, the Contractor shall be subrogated to all the rights the Government obtained through the terms required by this clause to be in any subcontract, as if all such rights had been assigned and transferred to the Contractor.

(9) To facilitate small business participation in subcontracting under this contract, the Contractor shall provide financing payments to small business concerns, in conformity with the standards for customary contract financing payments stated in Subpart 32.113. The Contractor shall not consider the need for such financing payments as a handicap or adverse factor in the award of subcontracts.

(k) Limitations on undefinitized contract actions. Notwithstanding any other progress payment provisions in this contract, progress payments may not exceed 80 percent of costs incurred on work accomplished under undefinitized contract actions. A "contract action" is any action resulting in a contract, as defined in Subpart 2.1, including contract modifications for additional supplies or services, but not including contract modifications that are within the scope and under the terms of the contract, such as contract modifications issued pursuant to the Changes clause, or funding and other administrative changes. This limitation shall apply to the costs incurred, as computed in accordance with paragraph (a) of this clause, and shall remain in effect until the contract action is definitized. Costs incurred which are subject to this limitation shall be segregated on Contractor progress payment requests and invoices from those costs eligible for higher progress payment rates. For purposes of progress payment liquidation, as described in paragraph (b) of this clause, progress payments for undefinitized contract actions shall be liquidated at 80 percent of the amount invoiced for work performed under the undefinitized contract action as long as the contract action remains undefinitized. The amount of unliquidated progress payments for undefinitized contract actions shall not exceed 80 percent of the maximum liability of the Government under the undefinitized contract action or such lower limit specified elsewhere in the contract. Separate limits may be specified for separate actions.

(l) Due date. The designated payment office will make progress payments on the 30th day after the designated billing office receives a proper progress payment request. In the event that the Government requires an audit or other review of a specific progress payment request to ensure compliance with the terms and conditions of the contract, the designated payment office is not compelled to make payment by the specified due date. Progress payments are considered contract financing and are not subject to the interest penalty provisions of the Prompt Payment Act.

(m) Progress payments under indefinite--delivery contracts. The Contractor shall account for and submit progress payment requests under individual orders as if the order constituted a separate contract, unless otherwise specified in this contract.

(End of clause)

52.236-2 DIFFERING SITE CONDITIONS (APR 1984)

As prescribed in 36.502, insert the following clause in solicitations and contracts when a fixed-price construction contract or a fixed-price dismantling, demolition, or removal of improvements contract is contemplated and the contract amount is expected to exceed the small purchase limitation. The Contracting Officer may insert the clause in solicitations and contracts when a fixed-price construction or a fixed-price contract for dismantling, demolition, or removal of improvements is contemplated and the contract amount is expected to be within the small purchase limitation.

(a) The Contractor shall promptly, and before the conditions are disturbed, give a written notice to the Contracting Officer of

(1) subsurface or latent physical conditions at the site which differ materially from those indicated in this contract, or

(2) unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the contract.

(b) The Contracting Officer shall investigate the site conditions promptly after receiving the notice. If the conditions

do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performing any part of the work under this contract, whether or not changed as a result of the conditions, an equitable adjustment shall be made under this clause and the contract modified in writing accordingly.

(c) No request by the Contractor for an equitable adjustment to the contract under this clause shall be allowed, unless the Contractor has given the written notice required; provided, that the time prescribed in (a) above for giving written notice may be extended by the Contracting Officer.

(d) No request by the Contractor for an equitable adjustment to the contract for differing site conditions shall be allowed if made after final payment under this contract.

(End of clause)

52.236-3 SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK (APR 1984)

(a) The Contractor acknowledges that it has taken steps reasonably necessary to ascertain the nature and location of the work, and that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to

(1) conditions bearing upon transportation, disposal, handling, and storage of materials;

(2) the availability of labor, water, electric power, and roads;

(3) uncertainties of weather, river stages, tides, or similar physical conditions at the site;

(4) the conformation and conditions of the ground; and (5) the character of equipment and facilities needed preliminary to and during work performance. The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by the Government, as well as from the drawings and specifications made a part of this contract. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the Government.

(b) The Government assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the Government. Nor does the Government assume responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its officers or agents before the execution of this contract, unless that understanding or representation is expressly stated in this contract.

(End of clause)

52.252-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by

paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this/these address(es):

<http://www.arnet.gov/far>
<http://farsite.hill.af.mil>
<http://www.acq.osd.mil/dp/dars/dfars.html>

(End of provision)

52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

<http://www.arnet.gov/far>
<http://farsite.hill.af.mil>
<http://www.acq.osd.mil/dp/dars/dfars.html>

(End of clause)

252.201-7000 CONTRACTING OFFICER'S REPRESENTATIVE (DEC 1991)

(a) "Definition. Contracting officer's representative" means an individual designated in accordance with subsection 201.602-2 of the Defense Federal Acquisition Regulation Supplement and authorized in writing by the contracting officer to perform specific technical or administrative functions.

(b) If the Contracting Officer designates a contracting officer's representative (COR), the Contractor will receive a copy of the written designation. It will specify the extent of the COR's authority to act on behalf of the contracting officer. The COR is not authorized to make any commitments or changes that will affect price, quality, quantity, delivery, or any other term or condition of the contract.

(End of clause)

52.232-5000 PAYMENT FOR MATERIALS DELIVERED OFF-SITE (MAR 1995)--EFARS

(a) Pursuant to FAR clause 52.232-5, Payments Under Fixed Priced Construction Contracts, materials delivered to the contractor at locations other than the site of the work may be taken into consideration in making payments if included in payment estimates and if all the conditions of the General Provisions are fulfilled. Payment for items delivered to locations other than the work site will be limited to: (1) materials required by the technical provisions; or (3) materials that have been fabricated to the point where they are identifiable to an item of work required under this contract.

(b) Such payment will be made only after receipt of paid or receipted invoices or invoices with canceled check showing title to the items in the prime contractor and including the value of material and labor incorporated into the item. In addition to petroleum products, payment for materials delivered off-site is limited to the following items: **NO ADDITIONAL ITEMS**
(End of clause)

Section 00800 - Special Contract Requirements

SECTION 00900 WAGE RATESGENERAL DECISION: **NY20030029** NY29

Date: June 13, 2003 sg 1/6/04

General Decision Number: **NY20030029**

Superseded General Decision No. NY020029

State: New York

Construction Type:
RESIDENTIAL

County(ies):

CLINTON	FULTON	LEWIS
ESSEX	HAMILTON	ST LAWRENCE
FRANKLIN	JEFFERSON	

RESIDENTIAL CONSTRUCTION PROJECTS (Consisting of single family homes and apartment up to and including 4 stories)

Modification Number	Publication Date
0	06/13/2003

COUNTY(ies):

CLINTON	FULTON	LEWIS
ESSEX	HAMILTON	ST LAWRENCE
FRANKLIN	JEFFERSON	

ELEC0236E 05/01/2000

	Rates	Fringes
FULTON AND HAMILTON COUNTIES		

ELECTRICIANS	14.95	5.55
--------------	-------	------

ELEC0910C 04/01/2002

	Rates	Fringes
CLINTON, ESSEX, FRANKLIN, JEFFERSON, LEWIS AND ST LAWRENCE COUNTIES		

ELECTRICIANS	12.56	6.98
--------------	-------	------

SUNY4056A 10/27/2000

	Rates	Fringes
CARPENTERS	13.16	

CEMENT MASONS/FINISHERS	15.09	4.19
LABORERS, Unskilled	10.06	
PAINTERS, (Brush & Roller)	11.98	
PIPEFITTERS	14.07	1.66
PLUMBERS	13.86	1.80
ROOFERS	10.90	
SHEET METAL WORKERS	10.92	.62

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(ii)).

In the listing above, the "SU" designation means that rates

listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal

process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review

Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

SECTION 00110 - SUBMISSION REQUIREMENTS AND INSTRUCTION

TABLE OF CONTENTS

PARAGRAPH NO.	PARAGRAPH TITLE	PAGE NO.
1.0	NOTICE TO OFFERORS	2
2.0	PROPOSAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS	2
3.0	VOLUME I - TECHNICAL PROPOSAL (VOLUME I)	3
4.0	VOLUME II - PRICE PROPOSAL (VOLUME II)	11
5.0	VOLUME III - SUBCONTRACTING PLAN (VOLUME III)	11
6.0	REVELANT PROJECT INFORMATION SHEET	13
7.0	PAST PERFORMANCE CUSTOMER QUESTIONNAIRE	14
8.0	KEY PERSONNEL RESUME FORM	18
9.0	SMALL BUSINESS SUBCONTRACTING PLAN (MODEL OUTLINE *)	19

SECTION 00110

SUBMISSION REQUIREMENTS AND INSTRUCTIONS

1.0 NOTICE TO OFFERORS

1.1 Acquisition

This is a Best Value, Lowest Priced-Technically Acceptable, with price evaluation preference for HUBZone small business concerns in accordance with FAR Contract Clause 52.219-4, for the design and construction (design-build) of 1st Brigade Barracks, Ft Drum, New York. The successful Offeror must design and construct a complete and useable facility, as described in the RFP documents.

1.2 Target Price

The target price for contract award for design and construction is \$20,100,000 for this project. The Government cannot guarantee that additional funds can be made available for award. Offerors are under no obligation to approach this amount.

1.3 Who May Submit

A single design firm or construction contractor with a subcontracted A-E services, a jointed ventured combination of an AE firm with a construction contractor or construction manager (CM), an A-E contractor with a subcontracted construction contractor (s), or a CM with an AE as a subcontractor are examples offerors who may submit. For the purpose of this solicitation, no distinction is made between formally organized design-build entities and project specific design-build association. Both are referred to as the design-build Offeror (or simply Offeror), or the design-build contractor (or simply contractor), after award of a contract.

1.4 Professional Registration

The Offeror, or Offeror's subcontractor(s), must have on its permanent staff professional architects and engineers registered in the appropriate technical disciplines for design activities. The design of architectural, electrical, civil, or other engineering features of the work shall be accomplished or reviewed and approved by architects or engineers registered to practice in the particular professional field involved in a State or possession of the United States.

1.5 Page Limit and Size of Printed Materials

In order to effectively and equitably evaluate all proposals, the Contracting Officer must receive information sufficiently detailed to clearly address submission requirements as outlined below. The written portion of the proposal (Volume I - Technical Proposal), however, shall not exceed 100 pages. This does not include drawings or other graphics, Volume II - Cost Proposal, or Volume III - Subcontracting Plan. A page printed on two sides will be counted as two pages. Pages containing text shall be submitted on 8-1/2 x 11 inch paper. Each page shall be minimally single spaced with a minimum 12-point font and one inch margins all around. Drawings or other graphics shall be reduced only to the extent legibility is not lost and shall be in half size sets of 16 x 23-inch in size.

2.0 PROPOSAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS

2.1 Proposal Requirements and Submission

The proposals sought by this solicitation shall contain three separate volumes:

Volume I - Technical Proposal

Volume II - Price Proposal
Volume III - Subcontracting Plan

Do not submit any material not required by this solicitation (such as company or system brochures). Offerors must meet all technical portions (design/construction criteria) of the RFP. The fact that section 01010 and the drawings are not required to be submitted and evaluated does not relieve the offerors from meeting all technical, or other requirements of the RFP.

2.2 Where to Submit

Offerors shall submit their proposal packages to the United States Army Corps of Engineers (USACE) at the address shown in Block 8 of Standard Form 1442.

2.3 Submission Deadline

The USACE must receive proposals not later than the time and date specified in Block 13 of Standard Form 1442.

2.4 Incurring Costs

The Government is not liable for any costs incurred by the Offeror submitting an offer in response to this solicitation.

2.5 Format Requirements

All proposals shall contain the volume number and the name, address and telephone number of the Prime and Subcontractors, Joint Venture, or other entity identified on the cover. Proposal clarity and material organization in each volume are mandatory. No material shall be incorporated by reference.

Each volume will be submitted separately bound. The proposal shall address and contain the information listed below. The information will be used by the Source Selection Board to evaluate each proposal. Offerors are advised that conciseness and relevance of the proposal is important and unrelated information will not be evaluated. Proposals that provide only superficial coverage of the information required below, may not receive additional consideration and may be excluded from the competitive range. Additionally, should the proposal include any standard company terms and conditions that conflict with the terms and conditions of the solicitation, the proposal may be determined to be "unacceptable" and thus ineligible for award.

3.0 VOLUME I - TECHNICAL PROPOSAL (VOLUME I)

The technical proposal shall be submitted in one three-ring binder with tabbed dividers separating the main sections with a detailed Table of Contents and List of Appendixes, labeled "Volume I - Technical Proposal". The sections shall parallel the submission requirements identified below. Provide six copies of bound material (folded and bound in Volume I).

3.1 Introduction (SHALL NOT BE EVALUATED)

The introduction shall include the following information:

- a. Name and address of organization.
- b. Location of the principal office.
- c. The type of organization (corporation, partnership, joint venture).
- d. The number of years the Offeror's organization has been in business.
- e. The number of years the Offeror's organization has been in business under its present business name.
- f. Other or former names the Offeror's organization operated under, and during which calendar years the organization operated under these other or former names.

3.1.1 If a corporation, provide the date of incorporation, state of incorporation, names and addresses of principal offices of the corporations, and state if the corporation is publicly held.

3.1.2 If a partnership, provide the date of organization, the type of partnership (general or limited), and names and addresses of all partners.

3.1.3 If a joint venture, provide the information contained above, for each element of the joint venture as may be appropriate.

3.2 Factor 1 - Past Relevant Experience of Offeror's Team

The Offeror as a Team will demonstrate relevant experience by providing Design-Build Experience or Design-Bid-Build Experience or a combination of both.

- Design-Build Experience
 - Not less than three (3) but no more than six (6) examples of physically completed relevant projects within the last seven (7) years at a minimum construction value between \$10,000,000 - \$20,000,000 each. The construction value shall include design costs. Physically completion is defined as the date the facility was turned over to, or occupied by the owner. Projects of a relevant nature may include but are not limited to the following: dormitories, barracks, housing or residential development, or apartment complexes (including Federal, State, local government or privately funded projects). Relevant experience can take into account past performance information regarding predecessor companies, key personnel who have relevant experience, or subcontractors that will perform major critical aspects of the project.
- Design-Bid-Build Experience
 - Not less than three (3) but no more than five (5) examples of relevant experience in design and not less than three (3) but no more than five (5) examples of relevant experience in construction. The relevant design and construction projects shall be physically completed within the last seven (7) years at a minimum construction value between \$10,000,000 - \$20,000,000 each. The construction value shall not include design costs. Physically completion is defined as the date the facility was turned over to, or occupied by the owner. Projects of a relevant nature may include but are not limited to the following: dormitories, barracks, housing or residential development, or apartment complexes (including Federal, State, local government or privately funded projects). Relevant experience can take into account past performance information regarding predecessor companies, key personnel who have relevant experience, or subcontractors that will perform major critical aspects of the project.

Information shall be provided on the form found in Paragraph 6.0, Relevant Project Information Sheet that includes the following:

- a. Company/firm name.
- b. Project name.
- c. Project location.
- d. Project size (square footage and number of units).
- e. Project relevance (i.e. barracks, dormitories, etc.).
- f. Type of contract (design-build or design-bid-build).
- g. Role (i.e. prime, joint venture, subcontractor) and work company/firm self-performed on project.
- h. Project award amount and completion amount.
- i. Project original contract duration and completion date and project final contract duration and completion date.

- j. Client/agency (if Government give contract number and name of Contracting Officer) and point of contact, phone number, and address for information on the role the Offeror had in the project.
- k. Designer of record.
- l. Construction contractor and subcontractor(s).
- m. Contractors Project Manager, Contractors Quality Control Manager, Design Quality Control Manager, Construction Quality Control Manager, Design/Construction Liaison, Design Team Members (all engineering disciplines), Superintendent, Contractors' Subcontractor Manager, Independent Technical Review Team, Safety Manager.

3.3 Factor 2 - Past Performance of Offeror's Team

Provide performance and evaluation information on the provided Past Performance Customer Questionnaire for projects submitted under Factor 1. The Offeror shall provide an explanation if the performance is less than satisfactory. Offeror shall request Past Performance Customer Questionnaires, found Paragraph 7.0, Past Performance Customer Questionnaire, to be filled out and returned directly to the USACE at the address shown in Block 8 of Standard Form 1442. Questionnaires should be received by the USACE by the proposal submission deadline in order to be considered. The offeror shall provide a copy of the front page of all Past Performance Customer Questionnaires in the technical proposal that were sent to clients as proof that the questionnaires were requested. Formal performance evaluations are those that are similar to the Corps of Engineers Construction Performance Evaluation Form DD 2626, or the submission of the DD 2626 or similar for Government projects. The Government reserves the right to verify previous performance by reviewing the USACE Construction Contractor or Architect-Engineers Appraisal Support System (CCASS/ACASS), or to interview owner or references. Provide information and an explanation for terminated design or construction projects where any of the Offeror's Team members were involved with the project at the time of the termination. In the event a Final Revised Proposal is requested, and the Offeror wishes to submit different examples from what was submitted in the original proposal, an attempt shall be made by the Offeror to provide performance and evaluation information on the provided Past Performance Customer Questionnaire for the new projects submitted. Consideration will be given for the potential short turnaround for receipt of the questionnaires by the USACE when a Final Revised Proposal is requested.

3.4 Factor 3 - Qualifications of the Offeror's Team

The Offeror shall provide the following to show qualifications of the team

- The Offeror shall identify in the construction portion of the team the areas and percent of construction they intend to self perform and the areas and percent of construction they intend to subcontract along with the names.
- Provide an organization chart showing key personnel for the Offeror's Design-Build Team. At a minimum, the organizational chart shall identify the key personnel, the contractor and/or subcontractor entities, their responsibilities, structure and lines of authority. The following minimum key personnel shall be identified by name: Contractors Project Manager, Contractors Quality Control Manager, Design Quality Control Manager, Construction Quality Control Manager, Design/Construction Liaison, Design Team Members (all engineering disciplines), Superintendent, Contractors' Subcontractor Manager, Independent Technical Review Team, Safety Manager. Individual resumes in the format found in Section 00110, Paragraph 8.0, Key Personnel Resume Form, shall be provided and that includes the following information:
 - a. Name.
 - b. Management title on this project.
 - c. Number of years with firm and other firms.
 - d. Number of years in this management title or role.
 - e. Specialization.
 - f. Professional registration.
 - g. Specific experience and qualifications relevant to this project.

Contractor's Project Manager: (Overall Manager of the Project)

- (1) Performs all project management duties of the project.
- (2) Serves as the Governments' sole point of contact in all matters relating to work including, but not limited to, contract compliance, progress of work, overall project scheduling, financial matters, and change orders.
- (3) Attends all job meetings.
- (4) On site a minimum of 30% of the time.
- (5) The Overall Project Manager shall have a minimum of ten years of project management experience in design and/or construction on projects of comparable complexity, scope and cost.

Contractor's Quality Control Manager: (Manager of Field and Office Quality Control Personnel)

- (1) Performs all quality control management duties required of the Contractor.
- (2) Serves as the Governments' primary point of contact in all matters relating to the quality of the work including, but not limited to, contract compliance and testing procedures.
- (3) The Contractor shall identify the CQC System Manager as an individual within his organization that is completely responsible for all Quality Issues and shall perform overall management of CQC system and have the authority to act in all CQC matters for the Contractor. This person shall at a minimum perform a monthly site visit and attend all partnering meetings to discuss, address quality issues during both design and construction and be on site during critical construction activities. This person shall be directly employed by the prime contractor (not a subcontractor) and shall have complete authority in all aspects of Quality Control. The prime contractor shall provide a letter to designate the duties and responsibilities of this person.

The Contractor's Quality Control Manager shall meet the following requirement:

Have a Bachelors of Science from an accredited engineering, architecture, or a construction management college and a minimum of 4 years construction experience and a minimum of 4 years of design experience, at a minimum one of the years experience must have been as a Quality Control or Quality Assurance Representative.

- (4) Has no other duties except Quality Control.
- (5) Attends all job meetings.
- (6) Reports all deficiencies to the Government and the Contractor's Project Manager for correction.
- (7) Works directly under, and is responsible to the Project Manager.
- (8) An alternate for the CQC System Manager will be identified in the plan to serve in the event of the System Manager's absence. The requirements for the alternate will be the same as for the designated CQC System Manager. The CQC systems manager may serve as the

Design/Construction Liaison, but if he/she takes on this additional duty than they must visit construction site three times a week.

Design Quality Control Manager: (Principal in Charge of Design Quality Issues and Coordination of Design Quality Control)

- (1) The Contractor shall identify the Design Quality Control Representative as an individual employed by the design firm or by the prime contractor that is completely responsible for all Design Quality Issues and shall perform coordination between the contractor, subcontractors, and the designer and have the authority to act in all design quality control matters for the prime contractor. During design this person shall at a minimum perform a bi-monthly coordination meeting to discuss coordination and quality issues concerning the design of the project. During construction this person shall at a minimum perform a monthly site visit and attend all partnering meetings to discuss and address design quality issues. This person shall be employed by the design firm or by the prime contractor and shall have complete authority in all aspects design coordination and design quality control for the Prime contractor. The prime contractor shall provide a letter to designate the duties and responsibilities of this person.
- (2) Attends during the design phase a bi-monthly coordination meeting to discuss coordination and quality issues. Hold a current state Professional Engineer's license. Have a Bachelors of Science from an accredited engineering, architecture, or a construction management college and a minimum of 6 years experience in design or design coordination.
- (3) Has no other duties except Design Quality Control.
- (4) Have complete authority in all aspects of design coordination and design quality control for the prime contractor.
- (5) An alternate for the Design Quality Control Representative will be identified in the plan to serve in the event of the Representative 's absence. The requirements for the alternate will be the same as for the designated Design Quality Control Representative.

Construction Quality Control Manager: (Principal in Charge of Construction Quality Issues and Coordination of Construction Quality Control)

- (1) The Contractor shall identify the Construction Quality Control Manager as an individual within his organization that is completely responsible for all Construction Quality Issues and shall perform coordination between the contractor, subcontractors, and any Independent Testing Labs and have the authority to act in all construction quality control matters for the prime contractor. During design this person shall at a minimum attend the bi-monthly coordination meeting to discuss coordination and quality issues concerning the design of the project. During construction this person shall be onsite at all times performing Construction Quality Control duties to include, but not limited to, implementation of the three-phase inspection system for all aspects of the construction work specified. This person shall have complete authority in all aspects of Construction Quality control. The prime contractor shall provide a letter to designate the duties and responsibilities of this person.
- (2) The Construction Quality Control Manager shall meet one of the following requirements:
 - a) Have a Bachelors of Science from an accredited engineering, architecture, or a construction management college and a minimum of 4 years experience in construction.
 - b) Shall have a minimum of 6 years of construction experience at a minimum level of a project superintendent.

- (3) Attends a bi-monthly coordination meeting during the construction phase to discuss coordination and quality issues.
- (4) On site at all times during construction performing construction quality control duties.
- (5) Has no other duties except construction Quality Control.
- (6) Directly employed by the prime contractor.
- (7) An alternate for the Construction Quality Control Representative will be identified in the plan to serve in the event of the Representative's absence. The requirements for the alternate will be the same as for the designated Construction Quality Control Representative.

Design/Construction Liaison:

- (1) Coordinates design activities throughout the life of the project for construction document development and construction activities.
- (2) Must meet one of the following:

BS in engineering with a minimum of 4 years design experience; or

Four (4) years construction experience and a minimum of two (2) years experience in technical design coordination.
- (3) Is allowable to perform the function of a Site Safety Officer, provided he/she meets the qualifications.
- (4) Supervises the commissioning phase of the contract.

Design Team Leader:

- (1) An individual having the leadership role in the production of the product.
- (2) For engineering products this individual is the project engineer/architect (PE/A).
- (3) For all projects the PE/A must be a registered professional.
- (4) This person is responsible for coordination between all disciplines, and ensures excellent integration of trades in both drawings and specifications.

Design Team:

The proposed design team shall, as a minimum, be comprised of the following disciplines: Architect, Civil Engineer, Structural Engineer, Mechanical Engineer, Electrical Engineer, Fire Protection, and Geotechnical Engineer. At least one person in a lead role of each discipline must be registered to practice in their professional field of engineering in the United States or its possessions (52.236-0025). Any substitutions in key personnel after award shall require Contracting Officer approval. The Offeror shall submit this information regarding their design team by providing all the information requested on STD forms SF 254 and SF 255 and the information listed below.

- 1) Full name
- 2) Years of construction and/or design experience
- 3) Professional backgrounds
- 4) Professional and/or contractor's licenses
- 5) Length of service with your organization
- 6) Other companies employed by in the past including time frames
- 7) Project related experience including time frames and brief project descriptions, including any design-build experience

Superintendent:(Overall Field Manager Responsible for Construction)

- (1) Performs all superintendent duties required of the Contractor, except any duties required under "Superintendence of Subcontractors" below.
- (2) Serves as the Governments' on site point of contact in all matters relating to the work including, but not limited to, scheduling of work, utility interruptions, and testing.
- (3) Attends all job meetings.
- (4) On site at all time during all construction activities.
- (5) Serves under, and reports directly to, the Contractor's Project Manager.
- (6) The On-Site Construction Superintendent shall have a minimum of 10 years construction experience on projects of comparable complexity, scope and cost.

Contractor's Subcontract Manager:

- (1) Performs all subcontract management/superintendent duties required of the Contractor, and any duties required under contract clause titled SUPERINTENDENCE OF SUBCONTRACTORS.
- (2) Serves as the Governments' final "Field" point of contact in all matters relating to the subcontracted work including, but not limited to, scheduling of work, utility interruptions, and testing.
- (3) Attends all job meetings.
- (4) Serves as the alternate in the event the Superintendent is absent.
- (5) On site at all times during construction activities of subcontracted work.
- (6) Works under, and reports directly to, the Contractor's Project Manager.

ITR Team:

- (1) Independent Technical Review (ITR) shall be performed as follows, all design submissions are reviewed by a qualified person or team, not affiliated with the development of a project/product, for the purpose of confirming the proper application of clearly established criteria in the RFP, regulations, laws, codes, principles and professional procedures. It includes the verification of assumptions, methods, and level of complexity of the analysis. It also verifies the alternatives

evaluated, appropriateness of data used, reasonableness of the results and functionality of the product relative to the customer's requirements.

Independent Technical Review Team (ITRT): An interdisciplinary group formed to perform the ITR.

ITRT Leader - The ITRT Leader is responsible for coordinating all activities associated with the technical review. This coordination includes receipt of review documents from the PE/A, distributing these documents to the ITRT members which may require coordinating the sharing of documents if there are not adequate copies for each member to have their own. The leader must also assure that the reviews are completed on schedule, collect the review comments from the various members and compile all comments into a single package. This package will then be provided to the PE/A. Additional responsibilities include:

- Assist the PE/A (when requested) in the development of the QCP Plan
- Attend the pre-design conference Determine the need for attendance at all major planning/design team meetings. • Select review team members who will attend the selected planning/design team meetings for in-progress reviews
- Conduct a team meeting early in the QC process to assure an understanding by the ITRT of the role and responsibility of each member
- Assure that ITR comments have been incorporated into the certified final design
- Obtaining signatures of ITRT members for the ITR certification and providing certification to PE/A

ITRT Members - The ITRT Member is responsible for performing an Independent Technical Review of the assigned planning/design component. Whenever the review calls for a level of specialized knowledge, experience, or training not possessed by ITRT members, the ITRT leader and the ITRT members will seek assistance from district functional chiefs in finding appropriate sources of review expertise within or outside the district. In addition are responsible for:

- Signing ITR certification
- Assuring his/her ITR comments have been incorporated into the certified final design
- ITR members must have minimum 10 years experience in their field of review and be a senior engineer in their field

Safety Manager: (Principal in Charge of Enforcing Safety Codes for the Project)

(1) Performs all safety management duties required of the Contractor including duties of the Site Safety Officer (reference Section 01420).

(2) Serves as the Governments' sole point of contact for all matters relating to safety.

(3) Continually enforces and implements the safety requirements of the contract including the Accident Prevention Plan.

(4) On site at all times during building activities, foundations work, structural steel erection, and exterior wall construction. During all other construction activities the Site Safety Officer may fulfill the position requirements of the Safety Manager (reference Section 01420).

(5) Works under and reports to the Contractor's Project Manager.

3.6 Substitution of Team Members:

- a. Each of the key personnel must have the experience as noted in the specifications for their specialty.
- b. The Offerors are advised that substitution of proposed key personnel will not be permitted unless approved by the Contracting Officer/ Source Selection Authority and an administrative modification to the contract is issued to incorporate the change. The authority for substitution of key personnel lies solely with the Contracting Officer and will not be delegated to the ACO or COR.
- c. Substitution of key personnel will only be allowed under the following conditions:
 - Change of Employment
 - Would pose hardship upon the employee which was not known at the time the proposal was submitted
 - Sickness
 - Substitution of team members from proposal to execution phase is not allowed
- d. Any proposed team member replacement shall meet or exceed the qualifications noted in the specifications for their specialty.

4.0 VOLUME II - PRICE PROPOSAL

The price proposal shall be submitted in a separate binder labeled "Volume II - Price Proposal". The sections shall parallel the submission requirements identified in the bid schedule. The design effort for the optional bid items will be included in the cost for the optional bid items. Provide six copies of bound written material (folded and bound in Volume II).

5.0 VOLUME III - SUBCONTRACTING PLAN

Factor 4 - The subcontracting plan shall be submitted in a separate binder labeled "Volume III - Subcontracting Plan". Large business concerns must submit as part of their proposal their subcontracting projections for this project in accordance with FAR Contract Clauses 52.219-8 and 52.219-9. To be acceptable, plans must adequately address the six required statutory elements and provide sufficient information to enable the Contracting Officer to answer affirmatively questions A through H of Appendix CC, Part 2, AFARS 19.705.

The six statutory elements are:

- 1) The extent to which firms are specifically identified in proposals
- 2) The extent of commitment to use such firms
- 3) The complexity of and variety of work small firms are to perform
- 4) The realism of the proposal
- 5) Past performance of Large Business Firms complying with formal subcontracting plan requirement and all firms, large or small, in complying with the contract clauses for utilization of small, small business disadvantaged, and women-owned small business firms.
- 6) The extent of participation by such firms with respect to total value of the contract

Percentage goals apply to the total amount being subcontracted. The current goals for the New York District are 57% to Small Business, 8.9% to Small and Disadvantaged Business, 8.1% to Woman Owned Small Business, 3.0% to HUBZone Business, and 3.0% to Service Disabled Veterans. The Offeror is put on notice that any targets represented in submitted proposal will be incorporated into and become part of any resulting contract. All proposed SDB concerns must be certified by the Small Business Administration and listed in the online database PRO-Net. SDB concerns may register in PRO-Net at <http://pronet.sba.gov>.

a. Subcontracting Plan. (Applies to Large Businesses only.) All large businesses shall submit a subcontracting plan with their technical and price/cost proposals. The plan should be prepared in accordance with FAR 52.219-9. Failure to submit an acceptable subcontracting plan may make the Offeror ineligible for award of the contract. The submission of the subcontracting plan is in no way advantageous to large businesses over any small business in the evaluation process.

b. Small Disadvantaged Business (SDB) Utilization Plan. (Applies to all Offerors.) Offerors shall submit a SDB Utilization Plan, to include the following information:

- (1) Identification of each SDB concern proposed and the work each is to perform.
- (2) Targets expressed in dollars and percentages representing each SDB concern's participation of the total contract value.
- (3) Total target value of all SDB participation, expressed in dollars and percentages, of the total contract value.

6.0 REVELANT PROJECT INFORMATION SHEET

PRIME CONTRACTOR/SUBCONTRACTOR EXPERIENCE

Company/Firm Name: _____

Project Name: _____

Project Location: _____

Project Size (square footage and number of units): _____

Project Relevance (i.e. barracks, dormitory, etc.): _____

Type of Contract (design-build or design-bid-build): _____

Role (i.e. prime, joint venture, subcontractor) and work Company/Firm self-performed on this project: _____

Project Award Amount: _____ Project Completion Amount: _____

Project Original Contract Duration and Completion Date: _____

Project Final Contract Duration and Completion Date: _____

Client/Agency (if Government, give contract number and name of Contracting Officer): _____

Client/Agency Point of Contact, Phone Number and Address (if Government, give contract number and name of Contracting Officer): _____

Designer of Record: _____

Construction Contractor and Subcontractor(s): _____

Overall Design and Construction Project Manager: _____

Project Architect: _____

Mechanical Engineer: _____

Electrical Engineer: _____

On-Site Construction Superintendent: _____

Quality Control Engineer/Manager: _____

7.0 PAST PERFORMANCE CUSTOMER QUESTIONNAIRE

The Offeror/Contractor listed is being considered in a Source Selection by the US Army Corps of Engineers, New York District. This is a request for past performance information on a project the Offeror has identified as being relevant to this solicitation. This information will be used in the evaluation of the Offeror's performance of that project. The following information, once submitted, will be treated as confidential and will not be released. This information will only be used to evaluate this Offeror for this solicitation. Please complete the following questionnaire utilizing the following guidance:

- a. Handwritten responses are sufficient.
- b. Circle a rating as listed below and provide a brief supporting narrative for your area of administrative responsibility. In the event of any unsatisfactory performance, please describe the cause and corrective actions, and any other pertinent information relative to the contractor's inadequate performance.
- c. The assessment questions contained in this questionnaire shall be rated pursuant to the following definitions:

Exceptional (E) - Indicates the contractor's performance exceeded the contractual requirements.

Satisfactory (S) - Indicates there were no major problems that were not quickly and effectively solved by the contractor, and the contractor was meeting all contractual requirements.

Marginal (M) - Indicates the area of evaluation contained major problems that were not effectively solved by the contractor. The contractor met basic contract requirements with assistance from the customer. Please include any written documentation supporting this rating.

Unsatisfactory (U) - Indicates a serious problem existed on the part of the contractor that precluded the contractor from meeting the contractual requirement(s). Please include any written documentation supporting this rating.

N/A - Not applicable or observed.

- d. Please return the completed forms to the US Army Corps of Engineers, New York District at the following mailing address or via fax at (212) 264-3013:

US Army Corps of Engineers, New York District
Room 1843
Jacob K. Javits Federal Building
26 Federal Plaza
New York, NY 10278-0090

PAST PERFORMANCE CUSTOMER QUESTIONNAIRE

PROJECT: 1ST BRIGADE BARRACKS, FORT DRUM, NY

“The U.S. Army Corps of Engineers, New York District, is interested in your assessment of the name company’s “past performance”. Past performance refers to the company’s record of conforming to contract requirements and to standards of good workmanship; the company’s record of forecasting and controlling costs; the company’s adherence to contract schedules including administrative aspects of performance; the company’s history of reasonable and cooperative behavior and commitment to customer satisfaction; and the company’s general business-like concern for the interest of the customer. These questions relate to work performed by:

Contractor under review: (Insert Company Name)

Name and Location of Project:

Respondent Identification:

Name

Date

Company/Organization

Position/Job Title

Telephone Number

Questionnaire:

1. Is the information provided by the contractor on the attached Project Fact Sheet accurate and correct to the best of your knowledge? Yes () No ()

2. What type of work did the contractor perform?

3. How would you rate the contractor's overall performance?

E S M U N/A

4. How would you rate the contractor's overall corporate management, integrity, reasonableness, and cooperative conduct?

E S M U N/A

5. How would you rate the contractor's quality control program and performance on delivery of quality work?

E S M U N/A

6. How effective was the contractor in meeting completion requirements including punch list items and warranty work?

E S M U N/A

7. How efficient and timely were the services performed (compliance with the schedules of completion)?

E S M U N/A

8. Please circle the statement that best describes your feelings with regard to the contractor.

- a. They were an outstanding contractor in every respect. Problems were solved in a spirit of teamwork. Quality work, timely actions, and complete documentation were routinely achieved. We would pay a premium price to contract with them again.
- b. They were an above average contractor to whom we would not hesitate to award to again. Problems encountered were minor and solutions were found with little difficulty.
- c. They were an average contractor meeting the minimum requirements of the contract. Performance deficiencies improved when identified by the client/agency.
- d. They were a below average contractor. Numerous problems developed that were a result of their lack of cooperation and failure to perform as required. An aggressive inspection program was required to ensure compliance.
- e. They were a poor contractor who we would not want again under any circumstances. We would have been within our rights to terminate them for default.
- f. None of the above. Please provide your statement. _____

9. Was the contractor given any of the following (or anything of a similar nature)?

Cure Notice: Yes No

Show Cause Notice: Yes No

Termination for Default: Yes No

10. If there are any additional comments, information, etc. that you would like to add to the survey that does not fall into any of the above categories, please indicate below:

Return to:

U.S. Army Corps of Engineers, New York District
Attn: Contracting Division (insert CT specialist name)
Jacob K. Javits Federal Building
26 Federal Plaza, Room 1843
New York, N.Y. 10278-0090
212-264-0238
212-264-3013 (Fax)

8.0 KEY PERSONNEL RESUME FORM

Name: _____

Management Title: _____

Number of Years: With this firm _____ With other firms _____

Number of Years in this position or role: _____

Specialization: _____

Professional Registration (Type and State of Registration): _____

Experience and Qualifications Relevant to this Project: _____

9.0 SMALL BUSINESS SUBCONTRACTING PLAN (MODEL OUTLINE *)

SMALL BUSINESS SUBCONTRACTING PLAN
Identification Data

Contractor:

Address:

Solicitation & Contract Number: _____

Item/Service: _____

Total Amount or Contract (Including options) \$ _____

Period of Contract Performance (DAY, MO. & YR.) _____

* Federal Acquisition Regulation (FAR), paragraph 19.708(b)(1)) prescribes the use of the clause at FAR 52.219-9 entitled "Small Business Subcontracting Plan." The following is a suggested model for use when formulating such subcontracting plan. While this model plan has been designed to be consistent with FAR 52.219-9, other formats of a subcontracting plan may be acceptable. However, failure to include the essential information as exemplified in this model may be cause for either a delay in acceptance or the rejection of a bid or offer where the clause is applicable. Further, the use of this model is not intended to waive other requirements that may be applicable under FAR 52.219-9. "SUBCONTRACT," as used in this clause, means any agreement (other than one involving an employer-employee relationship) entered into by a federal government prime contractor or subcontractor calling for supplies or services required for performance of the contract or subcontract.

1. TYPE OF PLAN (check one)

- a. Individual Plan (All elements developed specifically for this contract and applicable for the full term of this contract, including any option periods.)
- b. Master Plan (Goals developed for this contract; all other elements standard; must be renewed every year.)
- c. Commercial Products Plan (Contractor sells large quantities of off-the-shelf commodities to many Government agencies. Plans/goals negotiated by a lead agency on a company-wide basis rather than for individual contracts. Plan effective only during the year for which it is approved. The contractor must provide a copy of the lead agency approval.)

(version 1/2002)

2. GOALS

State separate dollar and percentage goals, expressed in terms of percentages of total subcontracting dollars, for the use of small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns as subcontractors. The offeror shall include all subcontracts that contribute to contract performance, and may include a proportionate share of products and services that are normally allocated as indirect costs in the following format. **(For a contract with options, provide a separate statement for the basic contract and individual statements for each option year.)**

- a. Total estimated dollar value and percent of planned subcontracting with small businesses (include veteran-owned small, service-disabled veteran-owned small, HUBZone small, small disadvantaged, and women-owned small business concerns): (% of "c")
\$ _____ and _____ %
- b. Total estimated dollar value and percent of planned _____ subcontracting with large businesses (all business concerns classified as "other than small"): (% of "c")
\$ _____ and _____ %
- c. Total estimated dollar value of all planned subcontracting for an individual contract plan; or the offerors total projected sales, expressed in dollars, and the total value of projected subcontracts to support the sales for a commercial plan; i.e., the sum of a and b above: \$ (100 Percent)
\$ _____ and _____ %
- d. Total estimated dollar value and percent of planned subcontracting with veteran-owned small businesses: (% of "c")
\$ _____ and _____ %
- e. Total estimated dollar value and percent of planned subcontracting with service-disabled veteran-owned small businesses: (% of "c")
\$ _____ and _____ %
- f. Total estimated dollar value and percent of planned subcontracting with HUBZone small businesses: (% of "c")
\$ _____ and _____ %
- g. Total estimated dollar value and percent of planned subcontracting with small disadvantaged businesses: (% of "c")
\$ _____ and _____ %
- h. Total estimated dollar value and percent of planned subcontracting with women-owned small businesses: (% of "c")
\$ _____ and _____ %

3. DESCRIPTION OF PRODUCTS AND/OR SERVICES TO BE SUBCONTRACTED:

Provide a description of all the products and/or services to be subcontracted under this contract, and indicate the types of businesses supplying them: i.e., OTHER THAN SMALL BUSINESS (OTHER, e.g., LARGE BUSINESS), SMALL BUSINESS (SB), VETERAN-OWNED SMALL BUSINESS (VOSB), SERVICE-DISABLED VETERAN-OWNED SMALL BUSINESS (SDVOSB), HUBZONE SMALL BUSINESS, SMALL DISADVANTAGED BUSINESS (SDB), AND WOMEN-OWNED SMALL BUSINESS (WOSB):

(Check all that apply)

Subcontracted Other SB VOSB SDVOSB HUBZone SDB WOSB
Product/Service

(Attach additional sheets if necessary.)

4. A description of the method used to develop the subcontracting **GOALS**:

5. A description of the method used to identify potential **SOURCES** for solicitation purposes (e.g., whether you used existing company source lists, the Procurement Marketing and Access Network (PRO-Net) of the Small Business Administration (SBA), veterans service organizations, the National Minority Purchasing Council Vendor Information Service, the Research and Information Division of the Minority Business Development Agency in the Department of Commerce, or small, HUBZone small, small disadvantaged, and women-owned small business trade associations. A firm may rely on the information contained in PRO-Net (at <http://pro-net.sba.gov/>) as an accurate representation of a concern's size and ownership characteristics for the purposes of maintaining a small, veteran-owned small, service-disabled veteran-owned small, HUBZone small, and women-owned small business source list. Use of PRO-Net as its source list does not relieve a firm of its responsibilities (e.g., outreach, assistance, counseling, publicizing subcontracting opportunities) in this clause.

(Attach additional sheets if necessary.)

6. Indirect costs have _____ have not _____ been included in the dollar and percentage subcontracting goals stated above. (Check one.)

If indirect costs have been included, explain the method used to determine the proportionate share of such costs to be allocated as subcontracts to small, veteran-owned small business, service-disabled veteran-owned small, HUBZone small, small disadvantaged, and women-owned small business concerns.

7. PROGRAM ADMINISTRATOR

Name, title, position within the corporate structure, and duties and responsibilities of the employee who will administer the contractor's subcontracting program.

Name:

Title:

ADDRESS:

Telephone:

Facsimile:

Email:

Duties: Has general overall responsibility for the contractor's subcontracting program, i.e., developing, preparing, and executing individual subcontracting plans and monitoring performance relative to the requirements of this particular plan. These duties include, but are not limited to, the following activities:

- a. Developing and promoting company-wide policy initiatives that demonstrate the company's support for awarding contracts and subcontracts to small, veteran-owned small, service-disabled veteran-owned small, HUBZone small, small disadvantaged, and women-owned small business; and assure that small, veteran-owned small, service-disabled veteran-owned small, HUBZone small, small disadvantaged, and women-owned small businesses are included on the source lists for solicitations for products and services they are capable of providing;
- b. Developing and maintaining bidder's lists of small, veteran-owned small, service-disabled veteran-owned small, HUBZone small, small disadvantaged, and women-owned small business concerns from all possible sources;
- c. Ensuring periodic rotation of potential subcontractors on bidders lists;
- d. Ensuring that procurement "packages" are designed to permit the maximum possible participation of small, veteran-owned small, service-disabled veteran-owned small, HUBZone small, small disadvantaged, and women-owned small businesses;
- e. Make arrangements for the utilization of various sources for the identification of small, veteran-owned small, service-disabled veteran-owned small, HUBZone small, small disadvantaged, and women-owned small businesses such as the SBA's PRO-Net, the National Minority Purchasing Council Vendor Information Service, the Office of Minority Business Data Center in the Department of Commerce, the facilities of local small business, minority associations, and contact with federal agencies' Small Business Specialists;
- f. Overseeing the establishment and maintenance of contract and subcontract award records;
- g. Attending or arranging for the attendance of company counselors at Business Opportunity Workshops, Minority Business Enterprise Seminars, Trade Fairs, Procurement Conferences, etc.;
- h. Ensure that small, veteran owned small, service-disabled veteran-owned small, HUBZone small, small disadvantaged, and women-owned small business concerns are made aware of subcontracting opportunities and how to prepare responsive bids to the company;
- i. Conducting or arranging for the conduct of training for purchasing personnel regarding the intent and impact of Section 8(d) of the Small Business Act on purchasing procedures;
- j. Monitoring the company's performance and making any adjustments necessary to achieve the subcontract plan goals;
- k. Preparing, and submitting timely, required subcontract reports;
- l. Coordinating the company's activities during the conduct of compliance reviews by federal agencies;

- m. Providing technical assistance; e.g., engineering, quality control, and managerial assistance to small, veteran-owned small, service-disabled veteran-owned small, HUBZone small, small disadvantaged, and women-owned small businesses.
 - n. Other duties:
-
-
-

8. EQUITABLE OPPORTUNITY

Describe efforts the offeror will make to ensure that small, veteran-owned small, service-disabled veteran-owned small, HUBZone small, small disadvantaged, and women-owned small business concerns will have an equitable opportunity to compete for subcontracts. These efforts include, but are not limited to, the following activities:

a. Outreach efforts to obtain sources:

1. Contacting minority, women's, and small business trade associations;
2. Contacting business development organizations;
3. Attending small, veteran's, minority, and women's business procurement conferences and trade fairs;
4. Requesting sources from the Small Business Administration's (SBA) PRO-Net;
5. Utilizing newspaper and magazine ads to encourage new sources.

b. Internal efforts to guide and encourage purchasing personnel:

1. Presenting workshops, seminars, and training programs;
2. Establishing, maintaining, and using small, veteran-owned small, service-disabled veteran-owned small, HUBZone small, small disadvantaged, and women-owned small business source lists, guides, and other data for soliciting subcontracts; and
3. Monitoring activities to evaluate compliance with the subcontracting plan.

c. Additional efforts:

9. FLOW-DOWN CLAUSE

The contractor agrees to include the provisions under FAR 52.219-8, "Utilization of Small Business Concerns," in all subcontracts that offer further subcontracting opportunities. All subcontractors, except small business concerns, that receive subcontracts in excess of \$500,000 (\$1,000,000 for construction) must adopt and comply with a plan similar to the plan required by FAR 52.219-9, "Small Business Subcontracting Plan."

10. REPORTING AND COOPERATION

The contractor gives assurance of: (1) cooperation in any studies or surveys that may be required; (2) submission of periodic reports which show compliance with the subcontracting plan; (3) submission of Standard Form (SF) 294, "Subcontracting Report for Individual Contract," and SF-295, "Summary Subcontract Report," in accordance with the instructions on the forms; and (4) ensuring that large business subcontractors with subcontracting plans agree to submit Standard Forms 294 and 295.

Reporting Period Report Due Date

Oct 1 - March 31 SF-294 4/30

Apr 1 - Sept 30 SF-294 10/30

Oct 1 - Sept 30 SF-295 10/30

Addresses

- a. **SF-294 to be submitted to the cognizant Small Business Representative for the New York District (Kathleen Hirschy, 26 Federal Plaza, NY NY 10278 Room 21-130) or as otherwise specified in the contract; and**
- b. **SF-295 to be submitted as above to the cognizant SBA Commercial Market Representative.**

11. RECORDKEEPING

The following is a recitation of the type of records the contractor will maintain to demonstrate the procedures adopted to comply with the requirements and goals in the subcontracting plan. These records will include, but not be limited to, the following:

- a. If the prime contractor is not using PRO-Net as its source for small, veteran-owned small, service-disabled veteran-owned small, HUBZone small, small disadvantaged, and women-owned small business concerns, list the names of guides and other data identifying such vendors;
- b. Organizations contacted in an attempt to locate small, veteran-owned small, service-disabled veteran-owned small, HUBZone small, small disadvantaged, and women-owned small business sources;
- c. On a contract-by-contract basis, records on each subcontract solicitation resulting in an award of more than \$100,000 indicating: (1) whether small business concerns were solicited, and if not, why not; (2) whether veteran-owned small business concerns were solicited, and if not, why not; (3) whether service-disabled veteran-owned small business concerns were solicited, and if not, why not; (4) whether HUBZone small business concerns were solicited, and if not, why not; (5) whether small disadvantaged business concerns were solicited, and if not, why not; (6) whether women-owned small business concerns were solicited, and if not, why not; and (7) if applicable, the reason that the award was not made to a small business concern;
- d. Records to support other outreach efforts, e. g., trade associations, business development organizations; conferences and trade fairs to locate small, HUBZone small, small disadvantaged, and women-owned small business sources; and veterans service organizations;
- e. Records to support internal guidance and encouragement provided to buyers through (1) workshops, seminars, training programs, incentive awards, and (2) monitoring of activities to evaluate compliance; and
- f. On a contract-by-contract basis, records to support subcontract award data including the name, address, and business size of each subcontractor. (This item is not required on a contract-by-contract basis for company or division-wide commercial plans.)
- g. Additional records:

This subcontracting plan was submitted by:

Signature: _____
Typed Name: _____
Title: _____
Date Prepared: _____
Phone Number: _____
Facsimile Number: _____
Email Address: _____

New York District Deputy for Small Business Recommendation:

_____/Date_____

Kathleen Hirschy

Phone 212 264 0147

Email: Kathleen.hirschy@usace.army.mil

Small Business Administration Approval:

Agency: U.S. Small Business Administration

Signature: _____

Typed Name: Debra B. Libow

Title: SBA Procurement Center Representative

Date Approved: _____

Phone Number: 212-264-4395

Facsimile Number: 212-264-3013

Contracting Officer Approval: _____/Date_____

SECTION 00120 - PROPOSAL EVALUATION AND CONTRACT AWARD

TABLE OF CONTENTS

PARAGRAPH NO.	PARAGRAPH TITLE	PAGE NO.
1.0	TECHNICAL/QUALITY EVALUATION AND GENERAL SCORING SYSTEM	2
2.0	AWARD OF CONTRACT	4

SECTION 00120

PROPOSAL EVALUATION AND CONTRACT AWARD

1.0 TECHNICAL/QUALITY EVALUATION AND GENERAL SCORING SYSTEM

1.1 Definitions

1.1.1 A "weakness" is a flaw in the proposal that increases the risk of unsuccessful contract performance.

1.1.2 A "significant weakness" is a flaw in the proposal that appreciably increases the risk of unsuccessful contract performance.

1.1.3 A deficiency is a material failure of a proposal to meet a Government requirement or a combination of significant weaknesses in a proposal that increases the risk of unsuccessful contract performance to an unacceptable level.

1.1.4 A deviation occurs when a proposal takes exception to, implies or specifically offers something below or above the specified criteria. The Offeror may or may not have called the deviation to the attention of the Government. A deviation that is below, or does not meet, the specified criteria is a deficiency. Evaluators must identify deviations.

1.1.5 Clarification is a limited exchange with an Offeror for the sole purpose of eliminating minor irregularities, informalities, or apparent clerical mistakes in the proposal or to address adverse past performance not previously addressed with the Offeror. Clarifications do not give an Offeror the opportunity to revise or modify its proposal and are used, as necessary, when not opening discussions.

1.1.6 Communications are a limited exchange with an Offeror used to assist in determinations of the competitive range. Communications are limited to enhancing Government understanding of proposals and addressing adverse past performance information not previously addressed if said information is the determining factor preventing an Offeror from being included in the competitive range. Such communications shall not be used to cure proposal deficiencies or material omissions, or otherwise revise the proposal.

1.1.7 Discussions offer the opportunity to resolve deficiencies or weaknesses in the proposals, based on the requirement and the evaluations factors set forth in the solicitation. If the Source Selection Evaluation Board (SSEB) determines it is necessary to open discussions, they must discuss with all Offerors in the competitive range. Offerors have the opportunity to revise their proposals at the conclusion of discussions.

1.2 Quality Evaluation and Scoring System(s)

1.2.1 The SSEB will perform an in-depth review of the proposals. The SSEB will rate each evaluation factor and sub-factor for each proposal against the specified evaluation criteria in the Request for Proposal (RFP). The evaluation committee will not compare proposals against each other.

1.2.2 The evaluation factors and sub-factors are listed below. All factors and sub-factors will be color rated in accordance with the rating sheet prepared by the SSEB. Factors 1, 2, and 3 are of equal weight and are all of greater importance than Factor 4. The Offerors shall submit, with their proposal, sufficient material to permit evaluation of the criteria listed below. Submission requirements are described in Section 00110, Submission Requirements and Instructions.

1.2.2.1 Proposal Submission: The proposal shall meet the submission and format requirements.

1.2.2.2 Volume I - Technical Proposal :

Introduction: The Offeror shall provide information on the organization with respect to name, type of organization, principal office location, number of years in business, and former names that the organization has operated under and Primary subcontractors and their role in the project.

Deviations to the concept plans and minimums set in specification section 01010 are not allowed unless prior approval is granted by government.

Do not submit any material not required by this solicitation (such as company or system brochures). It is assumed that the offerors will meet all technical portions (design/construction criteria) of the RFP. The fact that section 01010 and the drawings are not evaluated factors during solicitation does not relieve the offerors from meeting all technical, or other, requirements of the RFP.

Factor 1 - Past Relevant Experience of Offeror's Team: The Offeror as a Design-Build Team shall demonstrate relevant by providing design-build experience or design-bid-build experience or a combination of both.

Factor 2 - Past Performance of Offeror's Team: The Offeror as a Design-Build Team shall demonstrate at a minimum satisfactory performance and evaluation information, including timely completion of punch list and warranty work, for the projects submitted. In the case of an Offeror without a record of relevant past performance or for whom information on past performance is not available, the Offeror may not be evaluated by this factor (factor will be excluded).

Factor 3 - Qualifications of the Offeror's Team: The Offeror shall identify the areas and percent of construction they intend to self perform and the areas and percent of construction they intend to subcontract along with the names. Also they shall provide an organization chart and the key personnel for the Offeror's Design-Build Team.

1.2.2.3 Volume II - Price Proposal: The price proposal shall parallel the submission requirements identified in the bid schedule.

1.2.2.4 Volume III - Subcontracting Plan :

Factor 4 - Plans shall adequately address the six required statutory elements and provide sufficient information to enable the Contracting Officer to answer affirmatively questions A through H of Appendix CC, Part 2, AFARS 19.705.

1.2.3 Evaluation of the Technical Proposal (Volume I) and the Subcontracting Plan (Volume III) will be conducted using color adjectival ratings. Definitions of rating guidelines are as follows:

Color Ratings for Factors 1, 3 and 4:

<u>Color</u>	<u>Rating</u>	<u>Definition</u>
Green	Satisfactory	Meets evaluation standards, any weakness is readily correctable.
Yellow	Marginal	Fails to meet evaluation standards however any significant deficiency is correctable.
Red	Unsatisfactory	Fails to meet a minimum requirement of the RFP and the deficiency is not correctable without a major revision to the proposal.

Color Ratings for Factor 2 – Past Performance of Offeror’s Team

<u>Color</u>	<u>Rating</u>	<u>Definition</u>
Blue	Exceptional	Meets evaluation standards and exceeds many to the Government's benefit.
Purple	Very Good	Meets evaluation standards and exceeds some to the Government's benefit.
Green	Satisfactory	Meets evaluation standards.
Yellow	Marginal	Fails to meet evaluation standards. The evaluation standards being assessed reflect a serious problem for which the Offeror did not identify corrective actions. The Offeror's corrective actions appear only marginally effective or were not fully implemented.
Red	Unsatisfactory	Fails to meet most contractual requirements. The evaluation standard being assessed contained serious problem(s) for which the Offeror's corrective actions appear or were ineffective.

2.0 AWARD OF CONTRACT

2.1 The Government will award a Design-Build contract to the responsible Offeror whose technical proposal meets the following:

Factor 1: Past Relevant Experience of Offeror’s Team: The Government will not award to an offeror that receives an unsatisfactory (red) rating in this factor. The factor will be considered unsatisfactory (red) when the relevancy sub-factor is rated unsatisfactory (red).

A project will be rated unsatisfactory (red) when the relevancy sub-factor for that project is rated yellow and when one (1) of its three (3) other sub-factors [number of projects submitted (design-build and/or design-bid-build); projects completed within last seven (7) years; and construction value] is rated unsatisfactory (red).

Relevancy sub-factor is rated unsatisfactory (red) when:

- Two (2) design-build projects don’t meet relevant criteria
- OR
- A total of four (4) projects (design and/or construction) under design-bid-build don’t meet the relevant criteria
- OR
- A total of four (4) projects when a combination of design-build and design-bid-build don’t meet the relevant criteria.

Factor 2: Past Performance of Offeror’s Team: The Government will not award to an offeror that receives an unsatisfactory (red) rating in this factor when:

- One (1) design-build project receives an unsatisfactory rating
- OR
- A total of two (2) projects (design and/or construction) under design-bid-build receives an unsatisfactory rating
- OR
- A total of two (2) projects when a combination of design-build and design-bid-build receives an unsatisfactory rating

Factor 3: Qualifications of the Offeror's Team: The Government will not award to an offeror that receives an unsatisfactory (red) rating in this factor. The factor will be considered unsatisfactory (red) when:

- If the organizational chart fails to show the key personnel by name, responsibilities, structure and lines of authority.
- OR
- When the minimum qualifications are not met for Superintendent, Contractor's Quality Control Manager or the Construction Quality Control Manager
- OR
- When more than three (3) of the key personnel listed (Contractors Project Manager, Design Quality Control Manager, Design/Construction Liaison, Design Team Members (all engineering disciplines), Contractors' Subcontractor Manager, Safety Manager) do not meet the minimum qualifications.

Factor 4: Subcontracting Plan: Meets the requirements of Paragraph 2.1.3.

2.1.1 Overall technical merit will be assessed by a consideration of meeting the requirements of the RFP.

2.1.2 Price will be evaluated for adequacy and reasonableness and will include price evaluation preference for HUBZone small business concerns in accordance with FAR Contract Clause 52.219-4.

2.1.3 The subcontracting plan must adequately address the six required statutory elements and provide sufficient information to enable the Contracting Officer to answer affirmatively questions A through H of Appendix CC, Part 2, AFARS 19.705.

2.3 Offerors have been reminded to include their best technical and price terms in their initial offer and not to automatically assume that they will have an opportunity to participate in discussions or be asked to submit a revised offer. The Government may make award of an acceptable proposal without discussions, if deemed to be within the best interest of the Government.

SECTION TABLE OF CONTENTS

SECTION 00800

SPECIAL CONTRACT REQUIREMENTS

00800.1	COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK
00800.2	DISCLOSURE OF THE MAGNITUDE OF CONSTRUCTION PROJECTS
00800.3	COORDINATION PERIOD
00800.4	LIQUIDATED DAMAGES - CONSTRUCTION
00800.5	INSURANCE - WORK ON A GOVERNMENT INSTALLATION
00800.6	IMPLEMENTING GUARANTEES
00800.7	RECORD DRAWINGS
00800.8	PHYSICAL DATA
00800.9	AVAILABILITY AND USE OF UTILITY SERVICES
00800.10	CONSTRUCTION PROJECT SIGNS AND BULLETIN BOARD
00800.11	DEFAULT (FIXED-PRICE CONSTRUCTION) (TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER)
00800.12	EMPLOYEE AND VEHICLE IDENTIFICATION
00800.13	FIELD OFFICES
00800.14	PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS
00800.15	HAZARDOUS MATERIAL IDENTIFICATION AND MATERIAL SAFETY DATA
00800.16	SPECIAL SCHEDULING REQUIREMENTS FOR MECHANICAL AND ELECTRICAL SYSTEMS
00800.17	PREWORK CONFERENCE
00800.18	CONSTRUCTION COLOR BOARD SUBMITTALS
00800.19	ROAD CLOSURES AND UTILITY OUTAGES
00800.20	ACCESS ROUTES, CONTRACTOR AREAS AND DELIVERY AND VISITOR CONTROL
00800.21	EXISTING PARKING
00800.22	MAINTENANCE OF ACCESS ROADS
00800.23	FIRE PROTECTION
00800.24	SITE AND BUILDING SECURITY
00800.25	UTILITY VERIFICATION
00800.26	ARTIFACTS, PRESERVATION & PROTECTION OF HISTORICAL, ARCHAEOLOGICAL AND CULTURAL RESOURCES:
00800.27	CONNECTION WITH WORK OF OTHER CONTRACTS
00800.28	WORKING CONDITIONS, WORKING HOURS AND NON-WORKING DAYS
00800.29	CLEANING UP (CONSTRUCTION DISPOSAL, HOUSEKEEPING AND FINAL CLEANUP)
00800.30	DUST AND NOISE CONTROL
00800.31	OPERATION AND MAINTENANCE MANUALS
00800.32	PREPARATION OF DD FORM 1354 "TRANSFER OF ACCEPTANCE OF MILITARY REAL PROPERTY"
00800.33	COORDINATION OF TRADES
00800.34	PROGRESS PHOTOGRAPHS

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

00800.35	PARTNERSHIP IMPLEMENTATION PLAN
00800.36	DIGGING PERMIT
00800.37	PEST CONTROL
00800.38	COORDINATION MEETINGS
00800.39	CONTRACTOR'S KEY MANAGEMENT PERSONNEL
00800.40	CONTINUITY OF QUALITY PERFORMANCE
00800.41	GOVERNMENT RESIDENT MANAGEMENT SYSTEM
00800.42	DISPENSARY AND HOSPITAL FACILITIES
00800.43	CONTRACTOR WARRANTY MANAGEMENT
00800.44	CLAIMS PROCESSING PROCEDURES
00800.45	CONTRACT DRAWINGS, MAPS AND SPECIFICATIONS
00800.46	DESIGN-BUILD CONTRACT – ORDER OF PRECEDENCE:

SECTION 00800

SPECIAL CONTRACT REQUIREMENTS

00800.1 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK.

a. The Contractor shall be required to (I) commence work under this contract within 5 calendar days after the date the Contractor receives the notice to proceed, (ii) prosecute the work diligently, and (iii) complete the entire work ready for use not later than 920 calendar days after the date the Contractor receives the notice to proceed, except in case the Contracting Officer determines that seeding is not feasible during the construction period, the Contractor shall accomplish such seeding in the first planting period following the contract completion date. This action will not operate to extend the performance time for the balance of the work. The time stated for completion shall include final cleanup of the premises.

b. KEY PERSONNEL, SUBCONTRACTORS AND OUTSIDE ASSOCIATES OR CONSULTANTS: In connection with the services covered by this contract, any in-house personnel, subcontractors, and outside associates or consultants will be limited to individuals or firms that were specifically identified and agreed to during negotiations. The contractor shall obtain the Contracting Officers written consent before making any substitution for these designated in-house personnel, subcontractors, associates, or consultants.

c. Location: The site of work is located at Fort Drum, New York. The site of the work is on a military reservation and all rules and regulations issued by the Commanding Officer covering general safety, security, and sanitary requirements, etc., shall be observed by the Contractor.

d. The Contractor shall furnish all labor, materials, equipment, and services (except those furnished by the Government) for the following work: construction of three (3) barracks buildings (2-story) with 92 rooms each for unaccompanied enlisted personnel housing (UEPH) facilities with integrated soldier community facilities in the 10200 area.

e. All work shall be in accordance with the drawings and specifications or instructions attached hereto and made a part thereof, or to be furnished hereafter by the Contracting Officer and subject, in every detail, to his supervision, direction, and instructions.

00800.2 DISCLOSURE OF THE MAGNITUDE OF CONSTRUCTION PROJECTS. The magnitude of the Design/Build construction project is more than \$10,000,000.

00800.3 COORDINATION PERIOD. In addition to contract clause titled PRECONSTRUCTION CONFERENCE, the Contractor shall reserve a 2 workday period of time no later than one month following the contract preconstruction conference for coordination. The Contractor's project management team responsible for this project shall participate. During the 2-day coordination period the Contractor and the Government will exchange information related to the government regulations and procedures, points of contact, relevant design information and general discussion about the execution and coordination of the project. The Contractor shall dedicate his management team for this 2-day coordination period.

00800.4 LIQUIDATED DAMAGES-CONSTRUCTION.

a. If the Contractor fails to complete the work within the time specified in the contract, or any extension, the Contractor shall pay to the Government as liquidated damages, the sum of \$1,315.00 for each day of delay.

b. If the Government terminates the Contractor's right to proceed, the resulting damage will consist of liquidated damages until such reasonable time as may be required for final completion of the work together with any increased costs occasioned the Government in completing the work.

c. If the Government does not terminate the Contractor's right to proceed, the resulting damage will consist of liquidated damages until the work is completed or accepted.

At a time before the project is physically complete but is functionally complete to the satisfaction of the Government, the Government at its sole discretion may agree to accept transfer of the facility or project provided that the remaining work to be done ("punchlist") is completed no later than 30 days from the date of transfer. In this case the contractor shall pay liquidated damages for punchlist items not completed in the daily amount of \$256.00 per day commencing after 30 days of project transfer or after date required for project completion (including all extensions), whichever occurs later.

00800.5 INSURANCE - WORK ON A GOVERNMENT INSTALLATION

a. The Contractor shall, at it's own expense, provide and maintain during the entire performance of this contract, at least the kinds and minimum amounts of insurance as follows:

(1) General Liability Insurance (comprehensive form of policy)

Bodily Injury Liability - \$500,000 per occurrence

Property Damage Liability - \$20,000 per accident

(2) Automobile Liability Insurance

Bodily Injury Liability - \$200,000 per person and \$500,000 per accident

Property Damage Liability - \$20,000 per accident

(3) Workmen's Compensation and Employer's Liability Insurance

Compliance with all applicable workmen's compensation and occupational diseases statutes is required. Employer's liability coverage in the minimum amount of \$100,000 is required.

b. Before commencing work under this contract, the Contractor shall notify the Contracting Officer in writing that the required insurance has been obtained. The policies evidencing required insurance shall contain an endorsement to the effect that any cancellation or any material change adversely affecting the Government's interest shall not be effective --

(1) For such period as the laws of the State in which this contract is to be performed prescribe; or

(2) Until 30 days after the insurer or the Contractor gives written notice to the Contracting Officer, whichever period is longer.

c. The Contractor shall insert the substance of this clause, including this paragraph (c), in subcontracts under this contract that require work on a Government installation and shall require subcontractors to provide and maintain the insurance required in the Schedule or elsewhere in the

contract. The Contractor shall maintain a copy of all subcontractors' proofs of required insurance, and shall make copies available to the Contracting Officer upon request.

00800.6 IMPLEMENTING GUARANTEES. At any time subsequent to the acceptance by the Government of a completed installation under this contract, which installation is required to be covered by a specific guarantee or warranty under the terms of the various sections in the TECHNICAL PROVISIONS, the Installation Commander will be an additional authorized party for the purpose of implementing the provision of such guarantees or warranties in behalf of the Government.

00800.7 RECORD DRAWINGS.

a. General: The Contractor shall maintain as-built drawings during the construction period and shall submit final record drawings at the completion of individual facilities. The Government will provide to the Contractor the CAD (Computer-Aided Drafting) drawing files on electronic disks in microstation 8.0 format. The Contractor is required to make prints from the CAD files and continuously maintain drawings to show current as-built conditions for the duration of the construction. Except for updates as indicated below, the Contractor may maintain as-built drawings by marking up drawings by hand or by CAD methods. Scanned drawings will not be acceptable.

b. Progress As-built Prints: During construction the Contractor is responsible for maintaining one set of up to date paper prints to show as-built construction conditions. These prints shall be kept current and available on the job site at all times. All changes from the contract drawings that are made in the work or additional information, which might be uncovered in the course of construction, shall be accordingly recorded as they occur by means of details and notes. The Contracting Officer's Representative and a responsible representative of the Contractor prior to submission of each monthly pay estimate will jointly inspect the as-built prints for accuracy and completeness. Progress as-builts shall show at a minimum the following information:

- (1) The location and description of any utility lines, valves, or other installations of any kind within the construction area. The location includes dimensions to permanent features within +/- 6" of actual dimensions.
- (2) The location and dimensions of any changes with the building and structure.
- (3) Correct grade or alignment of roads, structures or utilities if any changes were made from the contract plans.
- (4) Correct elevations if changes were made in site grading.
- (5) Changes in details of design or additional information obtained from working drawings specified to be prepared and/or furnished by the Contractor including but not limited to fabricated, erection, installation plans and placing details, pipe sizes, insulation material, dimensions of equipment foundations, etc.
- (6) The topography and grades of all drainage installed or affected as part of the project construction.
- (7) All changes, which result from contract modifications.

(8) Where contract drawings or specifications allow options, only the option selected for construction shall be shown on the as-built prints.

(9) All amendments to the contract drawings issued during the solicitation period shall be posted on the as-built drawings.

c. Protection of Records: The Contractor shall be responsible for the protection and safety of prints and CAD records until returned to the Contracting Officer. Any drawings damaged or lost by the Contractor shall be satisfactorily replaced by the Contractor at his expense.

d. As-Built Updates: At the 25%, 50%, and 75% completion point in construction of this project as determined by progress payments) the Contractor shall update the CAD files of the project drawings in the appropriate CAD program to show as-built conditions and submit one set of CAD prints to the Contracting Officer for approval. The submission shall only include drawings that have incurred changes. The intent of the submission is to demonstrate construction changes as marked on the progress as-builts, are being made in the CAD files at regular intervals. The Contractor shall make any required corrections before payment will be approved for this item.

e. Preliminary Record Drawing Submittal: At least 30 calendar days before the anticipated date of final acceptance inspection the Contractor shall deliver 2 copies of progress prints showing final as-built conditions to the Contracting Officer for review and approval. These prints shall correctly show all the features of the project as it has been constructed, adding such additional drawings as may be necessary. Drawings shall be printed from the CAD files updated in the appropriate CAD program. Within 10 days, the Government will provide the Contractor one set of prints indicating required corrections to the preliminary submittal. The Contractor shall correct and resubmit within 5 days. Any required subsequent review and resubmission periods shall each be accomplished within 5 days. Upon Government approval of the preliminary submittal, the Contractor shall prepare final record drawings.

f. Record Drawing Submission: In the appropriate CAD program each drawing shall be marked with the words "RECORD DRAWING AS-BUILT" followed by the name of the Contractor in font which will print at least 3/16" high. All revisions to the original contract drawings will be dated in the revision block. All prints must be reproduced from the updated CAD files. A minimum of 5 calendar days before the anticipated date of final acceptance inspection of the project the Contractor shall deliver to the Contracting Officer:

Three (3) CD's of CAD files of Record Drawings.

One (1) copy of prints of Record Drawings.

Failure to make an acceptable submission of Record Drawings will delay the Final Acceptance Inspection for the project and will be cause for withholding any payment due the Contractor under this contract.

g. Property: All paper prints, reproducible drawings and CAD files will become property of the Government upon final approval. Approval and acceptance of the final record drawings will be accomplished before final payment is made to the Contractor.

h. Shop Drawings: Upon completing the work under this contract, the Contractor shall furnish a complete set of all shop drawings as finally approved. These drawings shall show all changes and revisions made up to the time the equipment is completed and accepted.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

00800.8 PHYSICAL DATA. Data and information furnished or referred to below is for the Contractor's information. The Government will not be responsible for any interpretation of or conclusion drawn from the data or information by the Contractor.

a. Weather Conditions: Climatological data determined from records of the U.S. Weather Bureau Station, Fort Drum, NY:

Mean Annual Temperature: 46.3 degrees F

Mean Annual Precipitation: 38.5 inches

See also paragraph 0800.11, DEFAULT (FIXED-PRICE CONSTRUCTION) (TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER).

b. Transportation Facilities:

(1) Railroads: Conrail serves the locality of the proposed work. The Contractor shall make all arrangements at his expense for the use of sidings necessary for the delivery of materials, equipment, supplies, and other facilities required for completion of the work. The Contractor's use of sidings must be arranged so as not to interrupt or delay the operation of the Military reservation.

(2) Highways and Roads: Routes US 11 and NYS Routes 26 & 3 serve the locality of the proposed work. Roads within the military reservation proposed to be used by the Contractor, shall be subject to prior approval of the Post authorities and such roads, if used, shall be maintained throughout construction and shall be restored to as good condition as existed prior to their use. The Contractor shall also construct such temporary haul roads and bridges as may be necessary for the conduct of his work. Any such temporary construction shall be restored to its original condition. All costs for the use of existing transportation facilities, for the construction of temporary facilities, and for maintenance, repair, removal and restoration shall be borne by the Contractor.

00800.9 AVAILABILITY AND USE OF UTILITY SERVICES.

a. The Government shall make all reasonable amounts of utilities, except for electric for temporary heat, available to the Contractor from existing outlets and supplies, as specified below.

b. The Contractor, at its expense and in a workmanlike manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines, and all meters required to measure the amount of each utility used for the purpose of determining charges. Before final acceptance of the work by the Government, the Contractor shall remove all temporary connections, distribution lines, meters and associated paraphernalia.

c. Temporary Heating:

(1) The Contractor shall be responsible to provide heat and maintain building temperature at 55 degrees F, 24 hours a day for areas of work, for the duration of the contract. Electric heat shall require Contracting Officer approval. Open flame heaters are prohibited.

d. The prevailing rates that will be charged to the Contractor for utility usage will be as follows:

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

Gas:\$0.8837/THERM
Water: \$2.9093/1000 GAL

Electric: \$0.88/KWH
Sewer \$3.9479/1000gal

e. The government shall make all reasonable amounts of utilities available to the contractor from existing outlets and supplies. Unless otherwise provided in the contract, the amount of each utility service consumed shall be charged to or paid for by the contractor at prevailing rates charged to the government or, where the utility is produced by the government, at reasonable rates determined by the Contracting Officer. The contractor shall carefully conserve any utilities furnished without charge.

f. The contractor, at its expense and in a workmanlike manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines, water line backflow prevention devices and all meters required to measure the amount of each utility used for the purpose of determining charges. Before final acceptance of the work by the government, the contractor shall remove all temporary connections, distribution lines, meters and associated paraphernalia.

g. All costs associated with the above rates are the Contractor's responsibility and shall be included in the Base Bid price.

00800.10 CONSTRUCTION PROJECT SIGNS AND BULLETIN BOARD.

a. The Contractor shall construct two project signs for each work site; one for project identification and the other to show on-the-job safety performance.

b. Sample sign drawings together with mounting and fabrication details are provided at the end of this section. The signs shall be erected as soon as possible and within 15 calendar days after the date of Notice to Proceed.

c. The two signs are to be displayed side by side and mounted for reading by passing viewers. The exact placement location will be as designated by the Contracting Officer.

d. Panels are to be fabricated using HDO (High Density Overlay) plywood with dimensional lumber uprights and bracing. The sign faces shall be non-reflective vinyl.

e. All legends are to be die-cut or computer cut in the sizes and typefaces specified and applied to the white panel background following the graphic formats shown on the attached sheets. The Communications Red panel on the left side of the construction project sign with the Corps signature (reverse version) shall be screen printed onto the white background.

f. Immediately upon beginning of work, the Contractor shall provide a weatherproof glass-covered bulletin board not less than 915 by 120 mm in size for displaying the Equal Opportunity Employment poster, a copy of the wage decision contained in the contract, Wage Rate Information poster, and other information approved by the Contracting Officer. The bulletin board shall be located at the project site in a conspicuous place easily accessible to all employees, as approved by the Contracting Officer. Legible copies of the above information shall be displayed until work is completed.

g. No separate payment will be made for erecting and maintaining the project signs or bulletin boards, and all costs in connection therewith will be considered the obligation of the Contractor. Upon completion of the project, the Contractor shall remove the signs and bulletin board from the work site.

00800.11 DEFAULT (FIXED-PRICE CONSTRUCTION) (TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER.

a. This provision specifies the procedure for the determination of time extensions for unusually severe weather in accordance with the contract clause titled DEFAULT (FIXED-PRICE CONSTRUCTION). The listing below defines the monthly-anticipated adverse weather for the contract period and is based upon NOAA or similar data for the geographic location of the project. In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

- (1) The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.
- (2) The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the Contractor.

STATION LOCATION: Fort Drum, NY

MONTHLY ANTICIPATED ADVERSE WEATHER CALENDAR DAYS change for fort drum

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
(13)	(11)	(10)	(10)	(9)	(6)	(7)	(6)	(7)	(9)	(10)	(15)

b. Upon start of actual construction and continuing throughout the contract, the contractor will record on the daily CQC report, the occurrence of adverse weather and resultant impact to normally scheduled work. The above schedule of anticipated adverse weather will constitute the base line for monthly (or portion thereby) weather time evaluations. Actual adverse weather days will be required on a Calendar day basis (include weekends and holidays) and compared to the monthly-anticipated adverse weather in subparagraph "a" above. For purposes of subparagraph "d" the term actual adverse weather days shall include days impacted by actual adverse weather days.

c. The number of actual adverse weather days shall be calculated chronologically from the first to the last day in each month. Once the number of actual adverse weather days anticipated in subparagraph "a" above have been incurred, the Contracting Officer will examine any subsequently occurring adverse weather days to determine whether a Contractor is entitled to a time extension. These subsequently occurring adverse weather days must prevent work for 50 percent or more of the Contractor's workday and delay work critical to the timely completion of the project. The Contracting Officer will convert any delays meeting the above requirements to Calendar days and issue a modification in accordance with the clause titled DEFAULT (FIXED-PRICE CONSTRUCTION).

d. The Contractor's schedule must reflect the above anticipated adverse weather delays on all weather dependent activities.

00800.12 EMPLOYEE AND VEHICLE IDENTIFICATION.

a. The Contractor shall be responsible for furnishing to each employee and for requiring each employee engaged on the work to display such identification as may be approved and directed by the Contracting Officer. All prescribed identification shall immediately be delivered to the Contracting

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

Officer for cancellation upon release of any employees. When required by the Contracting Officer, the Contractor shall obtain and submit fingerprints of all persons employed or to be employed on the project.

b. The Contractor and subcontractors shall register all company and private vehicles that will be used in the execution of this contract with the Installation Provost Marshall's office prior to start of work by the Contractor/subcontractor. Entry to the installation requires the following prior coordination with the Contracting Officer or designated representative; current vehicle registration, proof of insurance, valid driver's license for the vehicle driver, and procure identification for other personnel. Contractors/Subcontractors and their employees requiring access to the installation will be required to comply with the installation access control policy/procedures. The government will not be responsible for damages due to delay/stoppages caused by failure to comply.

c. All vehicles and personnel are subject to search and seizure of contraband and/or unauthorized government property. Contractor vehicles (Contractor-owned and personal), contractor personnel, and their personal property shall be subject to searches upon entering or leaving the installation. The search and seizure provisions of AR 190-22 shall apply to contractor personnel entering or leaving Fort Drum or activities/installations in the Fort Drum AR 5-9 area of responsibility which require access by Contractor personnel in performance of this contract.

00800.13 FIELD OFFICE

a. The Contractor shall furnish at the job site, prior to the start of work, a 20 feet by 15 feet field office for the use by Government representatives for the duration of the contract. Field office and contents remain the property of the contractor. The exact location will be designated by the Contracting Officer. The building shall be well constructed and properly ventilated and shall contain a closet and door and windows which shall be capable of being locked, four (4) new ergonomically-designed chairs, one (1) plan rack and drawing board, two (2) desks, one (1) two-drawer filing cabinet, and a conference table approximately 5 feet by 6 feet with 4 chairs. The Contractor shall also provide adequate electric lighting, minimum 6 duplex electrical receptacles, drinking water, heat, plumbed functional toilet facilities, air conditioning, janitorial services and maintenance services. In addition the contractor shall make arrangements and pay connection fees and monthly usage for electrical and 2-line telephone service (fax and voice). The field office shall be removed from the project site when and as directed by the Contracting Officer. In addition to the above, the Contractor shall provide the following computer and office equipment, and other items for use by the Government during the contract:

Hardware:

Personal Computer: (LAPTOP)

- Pentium IV processor running at 2.4 GHz or better
- High speed cache memory controller with at least 512 KB L2 PIPELINE BURST CACHE
- At least 556MB SDRAM
- (1) 3.5" 1.44 MB diskette drives with hard drive controller
- 10 GB hard drive with access time of 9 ms
- Sound Card *WI* SPEAKERS
- Enhanced 101 keyboard
- 6 outlet surge protector
- 17" Flat Panel SVGA high resolution COLOR monitor or better with refresh rate 75Hz or better and 8Mb Color Graphics
- 3 Button ergonomic mouse and mouse pad

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- Modem V.90 Or V.92 56KB Baud (U.S. Robotics or equal)
- Internal DVD ROM 16X and CD-RW (Read/Write) Drive 24X
- Microsoft Windows 2000 Professional Operating System
- Microsoft Office 2000 Professional Suite
- Lotus Smart Suite and Adobe Acrobat Reader
- Signature card reader: Gradkell Computer Inc.

Part# 050-0300 Description: Argus 300 (card reader and PCI adapter package) for CEFMS:
phone# (256)-722-8585 X37 (Mr. Wayne Wright)

- Norton Antivirus Software 2002 and periodic updates.

Printer:

- Hewlett Packard Laserjet 4100 Series Printer or equivalent Laserjet Printer.

Copier: Plain-paper, desktop, autofeed, monochrome, minimum 10 copies per minute.

Fax Machine: Monochrome, minimum feed (3) - 8 1/2x11 inch pages per minute. Capable of receiving on plain white bond paper.

Telephone: 2-Line phone compatible with phone service.

Telephone Answering Machine: Standard, compatible with standard telephone line and local service.

First Aid Kit: As a minimum the kit will include antiseptic kit, eyewash solution, bandages, insect sting medication, aspirin and acetaminophen, and coldpack.

Fire Extinguisher: Type as required for a trailer the same size as office.

a. The Contractor, at its option, may furnish a trailer not less than 20 feet long. The trailer shall be approved by the Contracting Officer and shall have the facilities and be serviced as specified above for the field office.

b. No separate payment will be made for providing the above items and all costs in connection therewith will be considered the obligation of the Contractor.

Computer Security Requirements:

The contractor will agree to accept responsibilities and comply with procedures indicated below in connection with the furnishing of Contractor-owned computers for use by Government personnel in accordance with contract requirements.

a. The computers must be dedicated exclusively for Government use. Contractor will not use any computer it supplies which is designated for use by the Government. Contractor will assure that the Central Processing Unit (CPU) is electronically isolated from the contractor's and not inter-connected via Local Area Network (LAN).

b. Normal access to the computer shall be restricted to Corps of Engineers personnel. Contractor shall set up computers in a secure area and give the keys to the Government. Contractors must

immediately notify Government personnel when emergency access to the computer location was exercised by non-Government individuals, and what the circumstances were.

c. If the CPU hard drive fails, the Government will furnish an equivalent hard drive to the owner of the computer, and the old hard-drive will be returned to the Government. Contractor shall not remove any hard drive nor proceed with any repair of the computer unless an authorized Government employee witnesses and approves of the repair.

d. At the time of return of the computer, the Contractor will allow the Government to first remove all information from the hard-drive.

e. Contractor agrees to provide a written certification signed by an authorized officer of the company agreeing to the above policy.

00800.14 PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS. In addition to the requirements contained in contract clause titled PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS, and PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS the following will apply to all payments made under this contract:

a. At the time of submission of the project schedule, the Contractor shall submit for approval by the Contracting Officer or his authorized representative a breakdown of the contract work which shall be to the degree of detail required by the Contracting Officer or his representative to effect reasonable progress payments. The Contracting Officer or his representative will review this breakdown within 30 calendar days after receipt and either advise the Contractor that it is approved or disapproved, and if disapproved the reasons for disapproval. Only after the breakdown is approved will any payment invoice be accepted from the Contractor. The Contracting Officer can determine it is in the best interest of the Government to make payment without an approved breakdown, however, in no case will more than 10% of the contract amount be paid unless the breakdown is approved.

b. The Contractor shall submit requests for payment through submission of a proper invoice to the office or person(s) designated in subparagraph (c). For purposes of payment a "proper invoice" is defined as the following:

- (1) An estimate of the work completed in accordance with the approved breakdown indicating the percentage of work of each item and the associated costs.
- (2) A properly completed ENG Form 93 and 93a (where required).
- (3) All contractual submissions indicated elsewhere in this contract to be submitted with payment, such as updated progress schedules, updated submittal registers, etc.
- (4) The following certification executed by a responsible official of the organization authorized to bind the firm. A "responsible official" is either a corporate officer, partner, or owner, in the case of a sole proprietorship.

I hereby certify, to the best of my knowledge and belief, that:

- (1) The amounts requested are only for performance in accordance with the specifications, terms and conditions of the contract;

(2) Payments to subcontractors and suppliers have been made from previous payments received under the contract, and timely payments will be made from the proceeds of the payment covered by this certification, in accordance with subcontract requirements and the requirements of Chapter 39 of Title 31, United States Code; and

(3) This request for progress payments does not include any amounts, which the prime Contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract;

(4) This certification is not to be construed as final acceptance of a subcontractor's performance; and

(5) All required prime and subcontractor payrolls have been submitted.

(Name)

(Title)

(Date)

c. The Government will designate the office or person(s) who shall first receive the invoice submissions and the Contractor shall be so notified at the pre-construction conference. In addition to the designated Project Engineer, the Contractor shall at the same time submit one copy of the detailed breakdown and the ENG Form 93 and 93a to the Area Engineer.

d. The Government representative will return any request for payment that is deemed improper within 7 days of receipt and will specify the defects. If the defect concerns a disagreement as to the amount of work performed and/or the amount of the payment being submitted, the Government and the Contractor's representative will meet to resolve the differences and reach agreement. Upon agreement, the Contractor shall submit a new breakdown and ENG Form 93 and 93a and any other submissions requiring correction. These shall be incorporated with the previous submittal and will then constitute a proper invoice.

e. If agreement cannot be reached, the Government will determine the proper amount per contract clause, PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS and process the payment accordingly. In this event, a "proper invoice" for prompt payment purposes will not have been submitted to the Government.

f. The Government will pay the Contractor in accordance with the following time frames:

(1) Progress Payments. From the date a "proper invoice" is received, in accordance with subparagraphs b and d, the Government will issue a check within 14 calendar days.

(2) Reduction in Retainage Payment. If during the course of the contract, a reduction in retainage payment is required, the Government will issue a check within 14 calendar days after the approval of the release to the Contractor by the Contracting Officer or his authorized representative.

(3) Final Payment. A final payment request will not be considered valid until the Contractor has fulfilled all contract requirements including all administrative items, as-built's, training, payrolls, warranties, etc. and has submitted a release of claims. When the Contractor has fulfilled all contract requirements and a "proper invoice" has been submitted, the Government shall issue a check within 14 days from the date of acceptance of the project by the Contracting Officer.

00800.15 HAZARDOUS MATERIAL IDENTIFICATION AND MATERIAL SAFETY DATA.

a. *"Hazardous material,"* includes any material defined as hazardous under the latest version of Federal Standard No. 313 (including revisions adopted during the term of the contract).

b. The Contractor shall submit, a Material Safety Data Sheet, (OUS Department of Labor Form OSHA 174) meeting the requirements of 29 CFR 1910.1200(g) and the latest version of Federal Standard No. 313, for all hazardous material 5 days before delivery of the material, whether or not the Contractor is the manufacturer of these items. This obligation applies to all materials delivered under this contract that will involve exposure to hazardous materials or items containing these materials.

c. Neither the requirements of contract clause titled HAZARDOUS MATERIAL IDENTIFICATION AND MATERIAL SAFETY DATA nor any act or failure to act by the Government shall relieve the Contractor of any responsibility or liability for the safety of Government, Contractor, or subcontractor personnel or property.

d. Nothing contained in this contract clause titled HAZARDOUS MATERIAL IDENTIFICATION AND MATERIAL SAFETY DATA shall relieve the Contractor from complying with applicable Federal, State, and local laws, codes, ordinances, and regulations (including the obtaining of licenses and permits) in connection with hazardous material.

e. The Government's rights in data furnished under this contract with respect to hazardous material are as follows:

(1) To use, duplicate and disclose any data to which this clause is applicable. The purposes of this right are to (i) Apprise personnel of the hazards to which they may be exposed in using, handling, packaging, transporting, or disposing of hazardous materials; (ii) Obtain medical treatment for those affected by the material; and (iii) Have others use, duplicate, and disclose the data for the Government for these purposes.

(2) To use, duplicate, and disclose data furnished under this clause, in accordance with subparagraph (h)(1) of this clause, in precedence over any other clause of this contract providing for rights in data.

(3) The Government is not precluded from using similar or identical data acquired from other sources.

f. The Contractor shall insert this requirement, including this paragraph (f), with appropriate changes in the designation of the parties, in subcontracts at any tier (including purchase designations or purchase orders) under this contract involving hazardous material.

g. **SAFETY AND HEALTH REQUIREMENTS MANUAL** if this contract is for construction or dismantling, demolition, or removal of improvements with any Department of Army agency or component, the Contractor shall comply with all pertinent provisions of the latest version of U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, in effect on the date of the solicitation. The latest edition of the U.S. Army Corps of Engineers Safety and Health Requirements

Manual, EM 385-1-1 and it changes are available at <http://www.hq.usace.army.mil> (at the HQ homepage select Safety and Occupational Health). Contractor shall be responsible for complying with the current edition and all changes posted on the web as of effective date of this solicitation.

h. Before commencing the work, the Contractor shall: (1) Submit a written proposal for implementing the Accident Prevention Plan; and (2) Meet with representatives of the Contracting Officer to discuss and develop a mutual understanding relative to administration of the overall safety program.

00800.16 SPECIAL SCHEDULING REQUIREMENTS FOR MECHANICAL AND ELECTRICAL SYSTEMS. In reference to the contract clause entitled "PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS", see SECTION 01452 TESTING FOR MECHANICAL AND ELECTRICAL SYSTEMS for additional scheduling requirements for such systems.

00800.17 PREWORK CONFERENCE.

a. A preconstruction conference will be arranged by the Contracting Officer, or the Contracting Officer's Representative, after award of the contract and before commencement of work. The Contracting Officer's Representative will notify the Contractor of the time and date set for the meeting. At this conference, the Contractor will be oriented with respect to Government procedures and line of authority, contractual, administrative, and construction matters. Additionally, a schedule of required submittals will be discussed.

b. The Contractor shall bring to this conference the following items in either completed or draft form:

- The Contractor's order of work
- Accident Prevention Plan
- Quality Control Plan
- Superintendent Appointment Letter
- Subcontractors List

00800.18 CONSTRUCTION COLOR BOARD SUBMITTALS.

Refer to the architectural requirements in section 01010

00800.19 ROAD CLOSURES AND UTILITY OUTAGES.

a. Utility Outages:

(1) The Contractor is advised that the existing utilities service other buildings or areas adjacent to the specific work sites. These buildings will be active and utilized for the entire period of this contract. The Contractor shall maintain all utilities and systems operational at all times except outages approved by the Contracting Officer.

(2) All utility outages shall be scheduled by the Contractor and approved by the Contracting Officer. No outage will be approved which will adversely affect the current operation or mission accomplishment. Outages shall only be approved to perform tie-ins of new or temporary utilities to existing lines. The Contractor shall request, in writing, the Contracting Officers approval, of any proposed outages at least 14 calendar days prior to the date of the proposed outage. The Contractor shall also be responsible for any repairs or start-up procedures in the affected facilities caused by the outages. The Contractor shall coordinate with the Contracting Officer and

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

representatives of the Installation regarding the work that the Contractor must accomplish in various buildings to re-establish the utilities to proper working conditions. The request for the approval of a utility outage shall include, at minimum, the following: description of the utility; time and duration of the outage; areas and systems affected; proof that all preparatory work is complete; proof that all necessary materials, equipment and manpower are in place; utility lines have been verified; and a contingency plan is in place.

(3) Times frames during which the Contracting Officer may approve utility outages:

Electrical Services:

2200 to 0400 hours, Monday – Friday (daily)

Domestic Water:

2200 to 0400 hours, Monday – Friday

Fuel (Natural) Gas:

2200 to 0400 hours, Monday – Friday (daily)

Sanitary Drainage:

2200 to 0400 hours, Monday – Friday (daily)

Fire Detection/Alarm:

0700 to 1400 hours, Monday – Friday. Maximum duration of two (2) hours, subject to contingency plan.

Fire Protection Systems:

0700 to 1400 hours, Monday – Friday. Maximum duration of two (2) hours, subject to contingency plan.

Telecommunications (telephone, LAN, CATV):

2200 to 0400 hours, Monday – Friday. Maximum duration of four (4) hours.

(4) The Contractor shall have on-site all materials, equipment, manpower, etc. to complete all work during the approved duration of the outage. All utilities and systems shall be fully tested and operational prior to the end of the approved outage. Unscheduled outages shall be repaired immediately. Repairs and corrective actions shall proceed continuously in a diligent manner until all services and utilities are restored to their original condition.

b. Road Closures: Road closures shall not be allowed. Utility installations that affect the roads shall be accomplished in manner to provide through-traffic at all times. In this regard, the Contractor shall provide plates, install utilities in one half of the road at one time; provide temporary access, etc. The Contractor shall submit to the Contracting Officer, a proposed plan indicating how the work is to be performed in road areas and how through-traffic will be maintained. The Contractor shall provide temporary protection, signage, flagmen and traffic controls to maintain free vehicular movement as shown on the plans. Temporary protection, signage and traffic controls shall comply with New York State Department of transportation requirements. The plan shall be submitted 30 calendar days prior to initiating any work in the affected road access. No work shall take place until the Contracting Officer approves the plan. The Contractor shall notify the Contracting Officer, at a minimum of the one-week in advance, prior to any disruption in parking or traffic flow.

00800.20 ACCESS ROUTES, CONTRACTOR AREAS, DELIVERY AND VISITOR CONTROL.

a. The Contractor shall utilize only entry points as shown on the Location & Existing Condition Plan, C-1. The Contractor will only be allowed to access the installation through Onieda/Ontario Gate. Contractor's personnel and construction equipment will not be permitted in any place other than the project site and the haul route for the borrow and spoil sites, unless specifically authorized by the Contracting Officer. A request for authorization to use alternate limited access shall be made by the Contractor to the Contracting Officer at least 7 calendar days in advance.

b. The Contractor shall utilize the project site areas for his daily staging. Trailers, materials, or equipment shall not be placed or stored outside the project site unless such trailers, materials or equipment are assigned a separate and distant storage area by the Contracting Officer away from the vicinity of the staging area but within military boundaries. At the end of each work day mobile equipment, such as tractors, wheeled lifting equipment, cranes, backhoes and like equipment, shall be parked within the project site. The following shall remain fully accessible: sally ports, hydrants, standpipes and access ways. The Contractor shall be responsible for all temporary connections (power, water telephone, etc.) to the project site. The Contractor shall maintain the area in a clean and neat condition. Parking for Contractor's employees shall be on the project site. The Contractor will return all disturbed areas to their original condition unless specifically authorized by the Contracting Officer.

c. Additional off-site storage areas, if available, may be provided by the Government upon request from the Contractor at no additional cost. The Contractor must maintain all necessary security of his materials and supplies at this off-site location.

d. The Contractor shall be responsible for the control of material deliveries, vendors, suppliers, prospective employees and other authorized personnel entering the project area as relates to this contract. The Contractor shall install signs at entrances to the project directing deliveries and visitors to the proper entry points.

e. The Contractor shall be permitted to utilize the area for material storage and unloading, material hoists, rubbish containers, rubbish chutes (if any), temporary office and personnel dressing facilities, and all other items required for staging. Contractor shall maintain the grounds within his area. Grass and weeds shall be cut at least weekly during the growing season.

f. The Contractor shall provide chemical toilets for his personnel in the project site, and shall be responsible for cleaning and servicing these toilets in accordance with pertinent health regulations and assure a frequency of service as required to prevent odors or other nuisance. Use of toilet facilities by Contractor's employees within surrounding buildings will not be permitted.

g. The Contractor shall provide weather tight and waterproof storage facilities for all materials stored at the site and required to be incorporated into the work.

h. The Contractor shall remove rubbish containers when full or every 2 weeks which ever comes first.

i. The color of dumpsters, trailers, and storage sheds and portable latrines shall be approved by the Contracting Officer.

j. All materials, trailers, and storage sheds in staging and construction areas shall be elevated and stored a minimum of 3 feet from any structure or fixed object. Trailers shall have doors on both ends.

- k. Contractor shall limit employees to his work site.

00800.21 EXISTING PARKING. The existing parking for visitors and Government employees shall not be used by the Contractor. No contractor or subcontractor employee parking is available near the immediate facility and no parking on the shoulders of the roads are allowed.

00800.22 MAINTENANCE OF ACCESS ROADS.

a. The Contractor shall be responsible for the maintenance of access roads at the construction site. Maintenance of access roads shall include snow removal. The Contractor shall remove snow piles and rows when they affect safety, hamper emergency and fire vehicles, or block proper drainage.

b. The Contractor shall provide and allow full access to the project site to all traffic, except as noted, to other contractors and authorized personnel as designated by the Contracting Officer.

c. The Contractor shall not inflict damage upon land properties, roads outside the authorized construction areas by unwarranted entry upon, driving over curbs, passage through, damage to or disposal of, material on such land or property, or overloading of roads. The Contractor may make a separate agreement with any other party, regarding the use of, or right to, land or facilities outside the Installation. If such an agreement is made, it shall be in writing and a copy shall be furnished to the Contracting Officer. The Contractor shall hold and save the Government, its officers and agents free from liability of any nature or kind arising from any trespassing or damage occasioned by Contractor operations.

00800.23 FIRE PROTECTION. The Contractor will provide fire protection in accordance with Section 9 of EM 385-1-1, US Army Corps of Engineers Safety and Health Requirements Manual. The Contractor's means of providing such protection will be included in his safety plan as required by the contract. The plan shall include fire exits and access routes during construction and during partial acceptance of the facilities, if any. Although the Fort Drum Fire department and local departments with whom the installation has mutual aid agreements will respond to emergencies, the capabilities of these departments will be limited by their available equipment and access to the construction sites. The Fort Drum Fire Department does not permit open flame heating devices or tar kettles on roofs.

00800.24 SITE AND BUILDING SECURITY.

a. The Contractor shall be responsible for the security of the areas within the contract limits. When the Government takes possession of certain areas, the Contractor shall be responsible for the areas remaining under Contractor control.

b. The Contractor shall be responsible for furnishing an identification required by Fort Drum to each employee in accordance with paragraph titled IDENTIFICATION OF EMPLOYEES. The Contractor shall provide an updated list of all employees working on the site. This list shall be provided on a monthly basis or when requested by the Contracting Office throughout the duration of this contract.

00800.25 UTILITY VERIFICATION. The RFP drawings depict the general layout of all known utilities. The utility lines are presented for informational purposes only and shall be field verified by the Contractor prior to the start of any utility excavation work. The Contractor shall locate and determine elevations of all existing utilities that will be encountered during work and shall protect all such utilities from any possible damage during the progress of work. The Contractor shall excavate by hand, in the

vicinity of existing lines and operations. If damage should occur due to the Contractor's operations, repairs shall be made by qualified personnel at the Contractor's expense.

00800.26 ARTIFACTS, PRESERVATION & PROTECTION OF HISTORICAL, ARCHAEOLOGICAL AND CULTURAL RESOURCES.

a. Any and all items of prehistoric, historic and military relics or memorabilia, which may be discovered in the course of the construction activities, shall remain the property of the Government. Examples of such items include but are not limited to: printed matter or other papers, buttons, buckles, or fragments of uniforms, buried weapons, bayonets, sabers, cannon balls, ammunition, fragments of structures or foundations, in short any item of historical or archaeological value. Federal legislation provides for the protection, preservation and collection of scientific, prehistorical, historical and archaeological data, including relics and specimens, which might otherwise be lost due to alteration of terrain or building features as a result of any federal construction project. Any person who, without permission, injures, destroys, excavates, appropriates or removes any historical or prehistorical artifact, object of antiquity or archaeological resource from public lands of the United States is subject to arrest and penalty of law.

b. Cultural resources on Federal property are protected and managed by the Archaeological Resources Protection Act of 1979 and other applicable laws. The Contractor shall exercise care so as not to disturb or damage artifacts or fossils (should any be uncovered) during the excavation operations. Should the Contractor or any parties operating or associated with the performance of this contract discover evidence of possible scientific, prehistoric, historic or archaeological finds within the work limit lines or adjacent to work area shall immediately cease work at that location and notify the Contracting Officer. The Contractor shall provide the Contracting Officer with all information as to the specific location and nature of the findings. The Contractor shall cooperate fully with the Contracting Officer, except that all notifications by the Contractor shall be to the Contracting Officer and that all directions to the Contractor will be from the Contracting Officer. Where appropriate by reason of discovery, the Contracting Officer may order delays in time of performance or changes in the work or both. If such delays or changes are ordered, an equitable adjustment will be made in the contract in accordance with the applicable clauses of the contract.

00800.27 CONNECTION WITH WORK OF OTHER CONTRACTS. During the period of this contract, other contracts may be in force for the construction of other features of work on or adjacent to the site of work being accomplished under this contract. The Contractor shall arrange his plant and shall schedule and perform the work as to effectively cooperate with all other contractors and Government agencies. It is the Contractor's responsibility to know the extent of the limits of his contract. No direct or extra compensation will be allowed on account the cooperation required.

a. At all points of connection with work of other contracts, the Contract shall coordinate, as required, with the adjoining contracting to insure proper and timely connections.

b. Where the work under this contract is completed before that of the adjoining contractor, the Contractor shall terminate his work in an approved manner ready for future connection by the adjoining contractor. Pipes and conduits shall be closed with suitable caps or plugs that will prevent entry of dirt or debris, but that are readily removable when final connections are made. For underground lines that are back-filled, approved type markers that extend above the ground surface shall be provided to facilitate future location of the lines by the adjoining contract.

c. Where the work of the adjoining contractor is already in place, the Contractor shall perform all work required to effect the necessary connection, including locations of underground lines, removing of caps, providing necessary adapters or joining pieces, and all related incidental work for necessary for a proper, secure connection.

00800.28 WORKING CONDITIONS, WORKING HOURS, AND NON-WORKING DAYS.

a. Working Hours: Normal working hours shall be Monday - Friday, 0700 to 1700 hours. Differences to these working hours must be approved by the Contracting Officer.

b. Non-Working Days: During the course of this contract the Contractor shall not perform any physical work during the activities listed below. The dates provided are the "on or about" dates of the activities.

(1) All Government Holidays.

c. Working Conditions:

(1) Open trenches or road restrictions will not be permitted without the approval of the Contracting Officer.

(2) Access ways shall be fully usable.

(3) All cost for conformance with the above stated requirements shall be included with the lump sum contract amount and no claim for extra cost shall be considered.

00800.29 CLEANING UP (CONSTRUCTION DISPOSAL, HOUSEKEEPING AND FINAL CLEANUP).

a. All construction debris or other rubbish generated as a result of construction activities shall be disposed of, off the Installation, at the Contractor's expense. Clean soil and rock removed from the construction site will be allowed to be disposed of on Fort Drum as a means of rehabilitation for existing borrow pits. Scrap, debris or surplus construction materials shall not be buried or burned on the site or disposed of in the Installation sanitary disposal containers (dumpsters) but shall be loaded in the Contractor's dumpsters for disposal at a location other than the Fort Drum Installation. The Contractor must obtain all necessary permit/applications required for the disposal of debris for off site locations. The Contractor is responsible for obtaining all necessary permits required for the disposal of all construction debris, including proper disposal of Hazardous Materials.

b. All spillage and mud from the Contractor's trucks shall be removed promptly. All damages to existing curbing, roads, walks, trees, fencing, walls, landscaping and other Government Property resulting from the Contractor's activity, shall be repaired promptly, as directed by the Contracting Officer, and at the Contractor's expense.

c. Project housekeeping shall be done on a daily basis. Areas requiring housekeeping include the Contractor's area, all staging areas provided to the Contractor and around all trailers. At the end of each day, the Contractor shall leave the housekeeping areas broom clean and free of rubbish, litter, and construction debris generated by that day's work. Any dirt or mud which is tracked onto paved or surfaced roadways, shall be cleaned away immediately and in no case shall the Contractor leave the site at the close of work without verifying that all dirt or mud has been removed from any paved surface beyond the limits of construction.

d. The Contractor shall provide and maintain a dumpster of sufficient size at the project site. The dumpster shall be replaced or emptied at regular intervals to avoid overfilling and spillage and the area around the dumpster shall be kept clean at all times.

e. If, at any time during the progress of the work, the Contracting Officer determines that the Contractor is failing to comply with the requirements of the subparagraphs above, the Contractor will be directed to take such measures, as deemed necessary to constitute corrective action. Such measures may include the requirement to increase the work force assigned to the housekeeping and cleanup operations or to work during evenings or weekends until proper job conditions have been restored.

00800.30 DUST AND NOISE CONTROL.

a. Dust Control: The Contractor shall maintain all excavation, embankments, stockpiles, haul roads, permanent access roads, plant sites, waste areas, borrow areas and all other work areas within or outside of the project boundaries free from dust which would cause a hazard or nuisance to others. Approved temporary methods of stabilization consisting of sprinkling, chemical treatment, light bituminous treatment or similar methods will be permitted to control dust. Sprinkling, to be approved, must be repeated at such intervals as to keep all parts of the disturbed area damp at all times, and the Contractor shall have sufficient competent equipment on the project site to accomplish this if sprinkling is used. Dust control shall be performed as the work proceeds and whenever dust nuisance or hazard occurs. No separate or direct payment will be made to the Contractor for dust control and the cost thereof shall be considered incidental to and included in the contract prices. The Contractor will control his operations to prevent any measurable or visible dust from migrating outside of the work area.

b. Noise Control: The Contractor shall schedule extremely noisy activities with the Contracting Officer. The activities shall be planned to minimize the impact on existing facilities and building occupants

00800.31 OPERATION AND MAINTENANCE MANUALS.

a. The Contractor shall provide 3 sets of operation and maintenance manuals to be used for training, operation and maintenance for each piece of operating equipment and material finishes. All material shall be clearly identified, including its location on the project. Sheets shall be 8 1/2" x 11", except pull out sheets which may be neatly folded to 8 1/2" x 11". Manuals shall be properly indexed, bound in plastic covered 3-ring, loose-leaf binders with the project title lettered on the front cover, and shall contain:

- (1) Name, address, phone number and trade of all subcontractors.
- (2) Complete maintenance instruction; name, address and phone number of installing contractor, manufacturer's local representative, for each piece of operating equipment.
- (3) Narrative consisting of instruction for equipment and systems to include:
 - (a) Description of system and intent.
 - (b) Start-up Procedures.
 - (c) Emergency Procedures.

- (d) Shut-down Procedures.
 - (e) Maintenance Instructions.
 - (f) Wiring Diagrams and trouble shooting guidelines.
 - (g) System Layout Diagrams
- (4) Catalog data on plumbing fixtures, valves, water heaters, heating and cooling equipment, temperature controls, fans, electrical panels, and service entrance equipment, elevators and light fixtures.
 - (5) Instructions for use in training and operation and maintenance of each item of operating equipment.
 - (6) Manufacturer's name, type, color designation for ceramic tile, resilient floors, windows, doors, brick, concrete block, paint, roofing and other materials.
- b. Submit 3 copies of maintenance manual to the Contracting Officer for the Installation's use prior to request for substantial completion.
- c. Posted Operating Instructions: All major items of mechanical equipment shall have posted in a convenient and appropriate location operating instruction consisting of description of system operation, including necessary diagrams keyed to valve and piping identification systems. One set of instruction shall be 36" X 24" for posting on the wall. The instructions shall be laminated on both sides with clear plastic laminate. Two sets of laminated 8 1/2" X 11" instructions shall be provided with O&M manuals.
- 00800.32 PREPARATION OF DD FORM 1354 "TRANSFER OF ACCEPTANCE OF MILITARY REAL PROPERTY". At the conclusion of this contract, the Contractor shall compile and furnish to the Contracting Officer all costs and quantity data of materials and systems furnished and installed. A list of items for which the costs and quantity data is required and blank DD Form 1354 will be furnished to the Contractor by the Government. The Contractor shall return this information on a completed DD Form 1354 to the Contracting Officer within 10 days from receipt of the list. The following statements shall also be provided at the same time as the completed DD Form 1354:
- a. No Asbestos Statement: Upon completion of the work, the Contractor and all of his subcontractors shall provide a written statement stating that "No Asbestos-Containing" material/products were used in the construction.
 - b. No Polychlorinated Biphenyl (PCB) Statement: Upon completion of the work, the Contractor and all of his subcontractors shall provide a written statement stating that "No Polychlorinated Biphenyl (PCB)" material/products were used in the construction.
 - c. No Lead Statement: Upon completion of the work, the Contractor and all of his subcontractors shall provide a written statement stating that "No Lead" material/products were used in the construction.
 - d. If there are exceptions to the above statements, the contractor shall identify every location, the material, and provide an assessment of the hazard(s) to humans.

e. The Contractor shall submit all project closeout documents not previously provided to the Contracting Officer at the time of the Beneficial Occupancy Inspection.

00800.33 COORDINATION OF TRADES.

a. The contract drawings are in part diagrammatic and show the general arrangement of duct, piping and other mechanical and electrical trades. The Contractor must have a competent engineer on the project site to coordinate all fieldwork and shop drawings of the various trades prior to installation and/or submission of field or shop drawings for approval. The Contractor shall allot spaces to the various trades prior to installation of the work. In spaces where all the various installations cannot be accommodated, the Contractor shall notify the Contracting Officer and shall submit alternate solutions as to its solution at no cost to the Government. The decision of the Contracting Officer shall be final.

b. The Contractor shall be responsible for the coordinated drawings of the various trades showing locations and sizes of all sleeves, electric outlets, inserts, piping, shafts, hangers, lights, ducts, catwalks, pads, chases, sprinklers, smoke detectors, soffits, fascias, steel trusses, etc. Composite signed-off coordinated shop drawings shall be developed at 3/8" equals 1'-0 scale showing all mechanical-electrical work in hung ceilings and chases.

00800.34 PROGRESS PHOTOGRAPHS. The Contractor, as directed by the Contracting Officer's representative, shall submit monthly, a minimum of twelve (12) 8" X 10" color digital images showing construction progress and provide an electronic copy on 3.5" diskettes in JPEG image format each month of the photographs submitted. Minimum resolution of the digital images shall be 300 pixels per inch (ppi).

00800.35 PARTNERSHIP IMPLEMENTATION PLAN. To more effectively accomplish this contract, the Government proposes to form a partnership with the Contractor. This partnership would draw on the strengths of each organization in an effort to achieve a quality product within budget and on schedule. This partnership would be bilateral in make-up and participation would be totally voluntary. If mutually agreed to by both parties, a facilitator satisfactory to both parties shall be hired who would be responsible to arrange for an offsite conference location, provide all workshop materials, and compile and distribute a completed partnering agreement to all participants within 30 days of the partnering session. Conference site location shall be coordinated with the Contracting Officer for approval. The Contractor shall plan for the attendance of approximately 15-20 individuals from the Government in addition to the Contractor's and Subcontractor's personnel. The cost of the facilitator and conference facility will be paid by the Contractor. All other costs associated with partnership implementation will be borne by the Contractor. It is anticipated that the partnership conference will be for one day each time and will be held on a quarterly basis.

00800.36 DIGGING PERMIT. The Contractor shall be responsible for obtaining a digging permit prior to commencing any excavation. No excavation whether minor or major including trenching, sidewalk replacement, etc. will be permitted without an approved digging permit. Contractor shall carefully avoid contact or damage with any known or identified underground utilities. Work on or near roadways shall be flagged in accordance with the safety requirements in Safety and Health Requirements Manual EM 385-1-1, which forms a part of these specifications. Work located along the alert force route shall not cause blockage, and the Contractor shall maintain unobstructed access for alert force traffic at all times. Contractor shall apply for renewal of work permits as required if the work continues beyond the original permit expiration date.

00800.37 PEST CONTROL.

a. The Contractor shall deposit all food refuse in sealed trash containers to restrict food source for rodents.

b. The Contractor shall replace construction dumpsters at least every two weeks to prevent rodent harborage.

c. All materials, trailers, and storage sheds in staging and construction areas shall be elevated and stored a minimum of 3 feet from any structure or fixed object.

d. The Contractor shall cap all pipes at the end of each day to prevent pest infiltration.

00800.38 COORDINATION MEETINGS.

a. Weekly coordination meetings shall be conducted by the Contracting Officer representative with the Contractor and Fort Drum personnel to review and coordinate the construction schedule. The Contractor shall provide typed minutes of each meeting within 3 days of meeting.

b. The Contractor shall submit at each meeting, for approval by the Contracting Officer a “2-week construction look ahead” construction plan indicating the type and extent of construction to be performed. The plan shall be submitted 14 calendar days prior to actual construction.

00800.39 **Contractor's Project Manager:** (Overall Manager of the Project)

(1) Performs all project management duties of the project.

(2) Serves as the Governments' sole point of contact in all matters relating to work including, but not limited to, contract compliance, progress of work, overall project scheduling, financial matters, and change orders.

(3) Attends all job meetings.

(4) On site a minimum of 30% of the time.

(5) The Overall Project Manager shall have a minimum of ten years of project management experience in design and/or construction on projects of comparable complexity, scope and cost.

Contractor's Quality Control Manager: (Manager of Field and Office Quality Control Personnel)

(1) Performs all quality control management duties required of the Contractor.

(2) Serves as the Governments' primary point of contact in all matters relating to the quality of the work including, but not limited to, contract compliance and testing procedures.

(3) The Contractor shall identify the CQC System Manager as an individual within his organization that is completely responsible for all Quality Issues and shall perform overall management of CQC system and have the authority to act in all CQC matters for the Contractor. This person shall at a minimum perform a monthly site visit and attend all partnering meetings to discuss, address quality issues during both design and construction and be on site during critical construction activities. This person shall be directly employed by the prime contractor (not a subcontractor) and shall have complete authority in all aspects of Quality Control. The prime contractor shall provide a letter to designate the duties and responsibilities of this person.

The Contractors Quality Control Manager shall meet the following requirement:

Have a Bachelors of Science from an accredited engineering, architecture, or a construction management college and a minimum of 4 years construction experience and a minimum of 4 years of design experience, at a minimum one of the years experience must have been as a Quality Control or Quality Assurance Representative.

(4) Has no other duties except Quality Control.

(5) Attends all job meetings.

(6) Reports all deficiencies to the Government and the Contractor's Project Manager for correction.

(7) Works directly under, and is responsible to the Project Manager.

(8) An alternate for the CQC System Manager will be identified in the plan to serve in the event of the System Manager's absence. The requirements for the alternate will be the same as for the designated CQC System Manager. The CQC systems manager may serve as the Design/Construction Liaison, but if he/she takes on this additional duty than they must visit construction site three times a week.

Design Quality Control Manager: (Principal in Charge of Design Quality Issues and Coordination of Design Quality Control)

(1) The Contractor shall identify the Design Quality Control Representative as an individual employed by the design firm or by the prime contractor that is completely responsible for all Design Quality Issues and shall perform coordination between the contractor, subcontractors, and the designer and have the authority to act in all design quality control matters for the prime contractor. During design this person shall at a minimum perform a bi-monthly coordination meeting to discuss coordination and quality issues concerning the design of the project. During construction this person shall at a minimum perform a monthly site visit and attend all partnering meetings to discuss and address design quality issues. This person shall be employed by the design firm or by the prime contractor and shall have complete authority in all aspects design coordination and design quality control for the Prime contractor. The prime contractor shall provide a letter to designate the duties and responsibilities of this person.

(2) Attends during the design phase a bi-monthly coordination meeting to discuss coordination and quality issues. Hold a current state Professional Engineer's license. Have a Bachelors of Science from an accredited engineering, architecture, or a construction management college and a minimum of 6 years experience in design or design coordination.

(3) Has no other duties except Design Quality Control.

(4) Have complete authority in all aspects of design coordination and design quality control for the prime contractor.

(5) An alternate for the Design Quality Control Representative will be identified in the plan to serve in the event of the Representative 's absence. The requirements for the alternate will be the same as for the designated Design Quality Control Representative.

Construction Quality Control Manager: (Principal in Charge of Construction Quality Issues and Coordination of Construction Quality Control)

(1) The Contractor shall identify the Construction Quality Control Manager as an individual within his organization that is completely responsible for all Construction Quality Issues and shall perform coordination between the contractor, subcontractors, and any Independent Testing Labs and have the authority to act in all construction quality control matters for the prime contractor. During design this person shall at a minimum attend the bi-monthly coordination meeting to discuss coordination and quality issues concerning the design of the project. During construction this person shall be onsite at all times performing Construction Quality Control duties to include, but not limited to, implementation of the three-phase inspection system for all aspects of the construction work specified. This person shall have complete authority in all aspects of Construction Quality control. The prime contractor shall provide a letter to designate the duties and responsibilities of this person.

(2) The Construction Quality Control Manager shall meet one of the following requirements:

a) Have a Bachelors of Science from an accredited engineering, architecture, or a construction management college and a minimum of 4 years experience in construction.

b) Shall have a minimum of 6 years of construction experience at a minimum level of a project superintendent.

(3) Attends a bi-monthly coordination meeting during the construction phase to discuss coordination and quality issues.

(4) On site at all times during construction performing construction quality control duties.

(5) Has no other duties except construction Quality Control.

(6) Directly employed by the prime contractor.

(7) An alternate for the Construction Quality Control Representative will be identified in the plan to serve in the event of the Representative's absence. The requirements for the alternate will be the same as for the designated Construction Quality Control Representative.

Design/Construction Liaison:

(1) Coordinates design activities throughout the life of the project for construction document development and construction activities.

(2) Must meet one of the following:

BS in engineering with a minimum of 4 years design experience; or

Four (4) years construction experience and a minimum of two (2) years experience in technical design coordination.

(3) Is allowable to perform the function of a Site Safety Officer, provided he/she meets the qualifications.

- (4) Supervises the commissioning phase of the contract.

Design Team Leader:

- (1) An individual having the leadership role in the production of the product.
- (2) For engineering products this individual is the project engineer/architect (PE/A).
- (3) For all projects the PE/A must be a registered professional.
- (4) This person is responsible for coordination between all disciplines, and ensures excellent integration of trades in both drawings and specifications.

Design Team:

The proposed design team shall, as a minimum, be comprised of the following disciplines: Architect, Civil Engineer, Structural Engineer, Mechanical Engineer, Electrical Engineer, Fire Protection, and Geotechnical Engineer. At least one person in a lead role of each discipline must be registered to practice in their professional field of engineering in the United States or its possessions (52.236-0025). Any substitutions in key personnel after award shall require Contracting Officer approval. The Offeror shall submit this information regarding their design team by providing all the information requested on STD forms SF 254 and SF 255 and the information listed below.

- 1) Full name
- 2) Years of construction and/or design experience
- 3) Professional backgrounds
- 4) Professional and/or contractor's licenses
- 5) Length of service with your organization
- 6) Other companies employed by in the past including time frames
- 7) Project related experience including time frames and brief project descriptions, including any design-build experience

Superintendent:(Overall Field Manager Responsible for Construction)

- (1) Performs all superintendent duties require of the Contractor, except any duties required under "Superintendence of Subcontractors" below.
- (2) Serves as the Governments' on site point of contact in all matters relating to the work including, but not limited to, scheduling of work, utility interruptions, and testing.
- (3) Attends all job meetings.
- (4) On site at all time during all construction activities.
- (5) Serves under, and reports directly to, the Contractor's Project Manager.
- (6) The On-Site Construction Superintendent shall have a minimum of 10 years construction experience on projects of comparable complexity, scope and cost.

Contractor's Subcontract Manager:

- (1) Performs all subcontract management/superintendent duties required of the Contractor, and any duties required under contract clause titled SUPERINTENDENCE OF SUBCONTRACTORS.
- (2) Serves as the Governments' final "Field" point of contact in all matters relating to the subcontracted work including, but not limited to, scheduling of work, utility interruptions, and testing.
- (3) Attends all job meetings.
- (4) Serves as the alternate in the event the Superintendent is absent.
- (5) On site at all times during construction activities of subcontracted work.
- (6) Works under, and reports directly to, the Contractor's Project Manager.

ITR Team:

(1) Independent Technical Review (ITR) shall be preformed as follows, all design submissions are reviewed by a qualified person or team, not affiliated with the development of a project/product, for the purpose of confirming the proper application of clearly established criteria in the RFP, regulations, laws, codes, principles and professional procedures. It includes the verification of assumptions, methods, and level of complexity of the analysis. It also verifies the alternatives evaluated, appropriateness of data used, reasonableness of the results and functionality of the product relative to the customer's requirements.

Independent Technical Review Team (ITRT): An interdisciplinary group formed to perform the ITR.

ITRT Leader - The ITRT Leader is responsible for coordinating all activities associated with the technical review. This coordination includes receipt of review documents from the PE/A, distributing these documents to the ITRT members which may require coordinating the sharing of documents if there are not adequate copies for each member to have their own. The leader must also assure that the reviews are completed on schedule, collect the review comments from the various members and compile all comments into a single package. This package will then be provided to the PE/A. Additional responsibilities include:

- Assist the PE/A (when requested) in the development of the QCP Plan
- Attend the pre-design conference Determine the need for attendance at all major planning/design team meetings.
- Select review team members who will attend the selected planning/design team meetings for in-progress reviews
- Conduct a team meeting early in the QC process to assure an understanding by the ITRT of the role and responsibility of each member

- Assure that ITR comments have been incorporated into the certified final design
- Obtaining signatures of ITRT members for the ITR certification and providing certification to PE/A

ITRT Members - The ITRT Member is responsible for performing an Independent Technical Review of the assigned planning/design component. Whenever the review calls for a level of specialized knowledge, experience, or training not possessed by ITRT members, the ITRT leader and the ITRT members will seek assistance from district functional chiefs in finding appropriate sources of review expertise within or outside the district. In addition are responsible for:

- Signing ITR certification
- Assuring his/her ITR comments have been incorporated into the certified final design
- ITR members must have minimum 10 years experience in their field of review and be a senior engineer in their field

Safety Manager: (Principal in Charge of Enforcing Safety Codes for the Project)

- (1) Performs all safety management duties required of the Contractor including duties of the Site Safety Officer (reference Section 01420).
- (2) Serves as the Governments' sole point of contact for all matters relating to safety.
- (3) Continually enforces and implements the safety requirements of the contract including the Accident Prevention Plan.
- (4) On site at all times during building activities, foundations work, structural steel erection, and exterior wall construction. During all other construction activities the Site Safety Officer may fulfill the position requirements of the Safety Manager (reference Section 01420).
- (5) Works under and reports to the Contractor's Project Manager.

00800.40 CONTINUITY OF QUALITY PERFORMANCE. The Contractor agrees that in the event of any staffing or corporate changes, or substitution of subcontractors and/or consultants, during the performance of this contract the employees, subcontractors, or consultants engaged in the performance of the contract will continue to have the qualifications, professional background, education, and experience equal to that proposed by the Contractor and accepted by the Government for contract award. Any changes in key management personnel shall be submitted for approval by the Contracting Officer.

00800.41 GOVERNMENT RESIDENT MANAGEMENT SYSTEM AND CONTRACTOR QUALITY CONTROL MODULE. The Government will utilize an in-house Contract Administration program, Resident Management System (RMS). The Contractor shall utilize a Government furnished CQC Programming Module. See Section 01312, Resident Management System for requirements.

00800.42 DISPENSARY AND HOSPITAL FACILITIES. The facilities of the Fort Drum Post clinic are available to use by the Contractor only for the emergency treatment of his personnel injured at the job site. Charges to the Contractor for the use of said facilities will be at prevailing rates for the services provided and billing and payment will be made by separate transaction between the clinic and the Contractor.

00800.43 CONTRACTOR WARRANTY MANAGEMENT.

1. References:

Clause "Warranty of Construction", (FAR 52.246-0021)
Clause "Inspection of Construction", (FAR 52.246-12)
Specification Section 00800 Entitled "Special Contract Requirements" paragraph entitled
"Record Drawings"
Specification Section 01451 entitled "Contractor Quality Control Design/Build Construction"

2. General: Warranty of Construction. Per ref 1.a all construction shall be warranted against defects for a one-year period beginning at the project acceptance point. In addition, there may equipment, systems or items for which labor and/or materials are warranted beyond the one year point. These are extended warranty items. In order to insure that the Government systematically receives all warranties of construction, equipment and systems to which it is entitled, the contractor shall execute all actions as required by above references and as contained herein. The contractor shall not be permitted to claim improper and/or lack of maintenance as a reason to abdicate its responsibility to correct a warranty or latent defect items if the contractor is not in contract compliance pursuant to submission of O&M Manuals and /or maintenance instructions as required by references indicated in paragraph 4. or elsewhere in this contract.

3. Post-Completion Inspections: For purposes of management of construction warranties, the Government conducts four and nine month post construction warranty inspections with using agencies. The Contractor is encouraged to attend these inspections in order to better manage any warranty items for which it may be responsible.

4. Tagging of Extended Warranty Items: The Contractor shall install tags to identify items protected by extended warranty. The tags shall be minimum 3 inches by 5 inches in size, machine-printed in minimum 14-point type, and shall be weatherproof and oil resistant. Tags shall be attached to equipment if accessible or to accessible control panel, etc. As a minimum, tags shall indicate the following information:

"Extended Warranty Item:"

Name of Item

Name of System with which associated, number designation within system, or other identifier

Model Number

Serial Number

Start and end Dates of Warranty

Contract number

Contract Name

Contractor Name

Warranty Point of Contact name, organization and telephone number.

Warranty response time priority code

“WARNING - PROJECT PERSONNEL TO PERFORM ONLY OPERATIONAL MAINTENANCE DURING THE WARRANTY PERIOD.”

Contractor shall install additional tags on all equipment and systems where required for reasons of safety, maintenance, and prevention of damage.

5. Posting of Instructions: In addition to any posting of operating procedures as may be required elsewhere in this contract, any equipment or system for which proper operation or maintenance is critical in order to preserve warranties, prevent damage, or for reasons of safety shall have proper operating procedures posted near the equipment or near the operating point. The summarized schedule of Maintenance Instructions shall be inclusive and specific regarding all system components, indicate frequency of maintenance for each maintenance item, and briefly describe each maintenance procedure and cross-reference the volume and page number of the O&M Manual that details the maintenance procedure. Training shall include review of the Summarized Schedule of Maintenance. Instructions shall be protected by 1/16-inch thick plastic sheet. As a minimum such equipment or system shall include:

Electrical Substations

Transformers

Major HVAC System components including chillers, air-handlers, fans, etc.

HVAC Control Panel

Boilers

6. Warranty Plan. Within 10 days of the 80% completion point of this contract (or deliverable phase thereof), the contractor shall submit a warranty plan for Government approval per section “Submittals”. The Warranty Plan shall include all required actions and documents to assure that the Government receives all warranties to which it is entitled. The plan shall be in narrative form and contain sufficient detail to render it suitable for use by future maintenance and repair personnel, whether tradesmen, or of engineering background, not necessarily familiar with this contract. The plan shall be signed by a principal of the contractor. All documents in the plan shall be assembled in a binder. Upon acceptance it shall be signed by a Government Representative. The term “status” as indicated below shall include due date and whether item has been submitted or was accomplished. As a minimum the plan shall indicate:

a. Roles and responsibilities of all personnel associated with the warranty process, including points of contact and telephone numbers within the organizations of the contractor’s, subcontractors or suppliers involved. This shall cover both the one year warranty of construction and extended warranty items or systems.

b. Listing and status of O&M manuals and As-built drawings, and expected delivery dates.

c. Listing and status of all training to be provided to Government personnel, whether specified by contract or required by manufacturers. Indicate dates of training both planned and accomplished.

d. Listing and status of delivery of all Certificates of Warranty for extended warranty items, to include roofs, HVAC balancing, pumps, motors, transformers, and for all commissioned systems such as fire protection and alarm systems, sprinkler systems, lightning protection systems, etc.

e. A spreadsheet-type list for each warranted equipment, item, feature of construction or system, to include roofs, HVAC components, pumps, motors, transformers, and for all commissioned systems

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

such as fire protection and alarm systems, sprinkler systems, lightning protection systems, etc., as applicable. For each item, the list shall indicate the following information:

- Name of item
- Model and serial numbers.
- Location where installed
- Names of manufacturers or, suppliers and phone numbers.
- Names addresses and telephone numbers of sources of spare parts
- Identification of Warranted materials and labor, and other terms of warranty.
- Cross-reference to warranty certificates as applicable.
- Starting point and duration of warranty period.
- Summary of maintenance procedures required to continue the warranty in force.
- Cross-reference to specific pertinent Operation and Maintenance manuals
- Organization, names and phone numbers of persons to call for warranty service
- Typical response time and repair time expected for various warranted equipment

f. The contractor's acknowledgement of intention to attend the Four and Nine month post-construction warranty inspections conducted by the Government.

g. Status of tagging of all equipment covered by extended warranties.

h. Copies of instructions to be posted near selected pieces of equipment where operation is critical for warranty and/or safety reasons

i. Contractor's understandings with respect to warranty responsibilities for the one year overall warranty of construction, and expected performance on warranty calls during this period.

7. Warranty Meeting. Within 10 days after the approval of the Warranty Plan the contractor will notify the Government representative for the purpose of scheduling a meeting to clarify understandings of responsibilities with respect to warranties to which the Government is entitled. The Government and contractor shall attend the warranty meeting, as well as any subcontractors, or suppliers involved in the warranty process. The Warranty Plan shall be the basis of the meeting's agenda. Contractor will prepare minutes of the meeting indicating major understandings reached, and submit for Government approval within 3 days of the meeting. Minutes will be signed by authorized representatives of the Contractor and Government.

8. Warranty Requirements Compliance. Expected performance of the Contractor on warranty work is indicated herein. If Contractor performance on a warranty call is unsatisfactory, the Contracting Officer may authorize the use of funds remaining in the contract to accomplish the warranty work on an expedited basis including the cost of Government administrative expenses. Repeated poor performance may result in retaining any payment due the Contractor until after the warranty of construction period. The Contractor's Performance Bond shall remain effective through the contract-specified warranty period. Poor warranty performance may also result in a poor contractor performance rating being entered into the Government CCASS system, or downward revision of such rating if already entered.

9. Warranty Performance – Expected Response to Construction Warranty Service Requests and Completion of Repairs: Following oral or written notification by the Contracting Officer, the Contractor shall respond to construction warranty service requirements in accordance with the "Construction Warranty Service Priority List" and the three categories of priorities listed below. The Contractor shall submit a report on any warranty item that has been repaired during the warranty period. The report shall

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

include the cause of the problem, date reported, corrective action taken, and when the repair was completed.

a. First Priority Code 1. Perform onsite inspection to evaluate situation, and determine course of action within 4 hours, initiate work within 6 hours and work continuously to completion or relief.

b. Second Priority Code 2. Perform onsite inspection to evaluate situation, and determine course of action within 8 hours, initiate work within 24 hours and work continuously to completion or relief.

c. Third Priority Code 3. All other work to be initiated within 3 work days and work continuously to completion or relief.

d. The "Construction Warranty Service Priority List" is as follows:

Code 1-Air Conditioning Systems

- (1) Recreational support.
- (2) Air conditioning leak in part of building, if causing damage.
- (3) Air conditioning system not cooling properly.

Code 1-Doors

- (1) Overhead doors not operational, causing a security, fire, or safety problem.
- (2) Interior, exterior personnel doors or hardware, not functioning properly, causing a security, fire, or safety problem.

Code 3-Doors

- (1) Overhead doors not operational.
- (2) Interior/exterior personnel doors or hardware not functioning properly.

Code 1-Electrical

- (1) Power failure (entire area or any building operational after 1600 hours).
- (2) Security lights
- (3) Smoke detectors

Code 2-Electrical

- (1) Power failure (no power to a room or part of building).
- (2) Receptacle and lights (in a room or part of building).

Code 3-Electrical

Street lights.

Code 1-Gas

- (1) Leaks and breaks.
- (2) No gas to family housing unit or cantonment area.

Code 1-Heat

- (1). Area power failure affecting heat.
- (2). Heater in unit not working.

Code 2-Kitchen Equipment

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- (1) Dishwasher not operating properly.
- (2) All other equipment hampering preparation of a meal.

Code 1-Plumbing

- (1) Hot water heater failure.
- (2) Leaking water supply pipes.

Code 2-Plumbing

- (1) Flush valves not operating properly.
- (2) Fixture drain, supply line to commode, or any water pipe leaking.
- (3) Commode leaking at base.

Code 3 -Plumbing

Leaky faucets.

Code 3-Interior

- (1) Floors damaged.
- (2) Paint chipping or peeling.
- (3) Casework.

Code 1-Roof Leaks

Temporary repairs will be made where major damage to property is occurring.

Code 2-Roof Leaks

Where major damage to property is not occurring, check for location of leak during rain and complete repairs on a Code 2 basis.

Code 2-Water (Exterior)

No water to facility.

Code 2-Water (Hot)

No hot water in portion of building listed.

Code 3-All other work not listed above.

10. Post-Completion Inspections: The Government conducts project inspections for purposes identifying warranted deficiencies at the four and nine month points after project acceptance. The Contractor is required to attend these inspections in order to better manage any warranty items for which it may be responsible.

00800.44 CLAIMS PROCESSING PROCEDURES. The following shall be submitted to the Contracting Officer at the following address: US Army Corps of Engineers, New York District, 26 Federal Plaza, Room 1843, NY, NY 10278-0090:

- a. Claims referencing or mentioning the Contracts Disputes Act of 1978.
- b. Request for a written decision by the Contracting Officer.
- c. Claims certified in accordance with the Contract Disputes Act of 1978.

No other Government representative is authorized to accept such a request. A copy shall also be provided to the authorized Contracting Officer's Representative. The Contractor shall also provide the Contracting Officer with a copy of requests for additional time, money, or interpretation of contract requirements which were provided to the authorized representative of the Contracting Officer that have not been resolved after 90 days.

00800.45 CONTRACT DRAWINGS, MAPS AND SPECIFICATIONS.

a. The Government under this contract, will provide the contractor, without charge, five (5) sets of Request for Proposal (RFP) packages except publications incorporated into the technical provisions by reference.

b. The contractor shall:

- (1) Check all drawings furnished immediately upon receipt;
- (2) Complete all drawings and verify the figures before laying out the work;
- (3) Promptly notify the Contracting Officer of any discrepancies;
- (4) Be responsible for any errors that might have been avoided by complying with this paragraph (b); and
- (5) Reproduce and print contract drawings and specifications as needed.

c. In general:

- (1) Large-scale drawings shall govern small-scale drawings; and
- (2) The contractor shall follow figures marked on drawings in preference to scale measurements.

d. Omissions from the drawings of specifications or the mis-description of details of work that are manifestly necessary to carry out the intent of the drawings and specifications, or that are customarily performed, shall not relieve the contractor from performing such omitted or mis-described details of the work. The contractor shall perform such details as if fully and correctly set forth and described on the drawings and specifications.

00800.46 DESIGN-BUILD CONTRACT – ORDER OF PRECEDENCE:

The contract includes the standard contract clauses and schedules current at the time of contract award. It entails (1) the solicitation in its entirety, including all drawings, cuts, and illustrations, and any amendments, and (2) the successful offeror's accepted proposal. The contract constitutes and defines the entire agreement between the Contractor and the Governments. No documentation shall be omitted which in any way bears upon the terms of that agreement. In the event of conflict or inconsistency between any of the provisions of this contract, precedence shall be given in the following order:

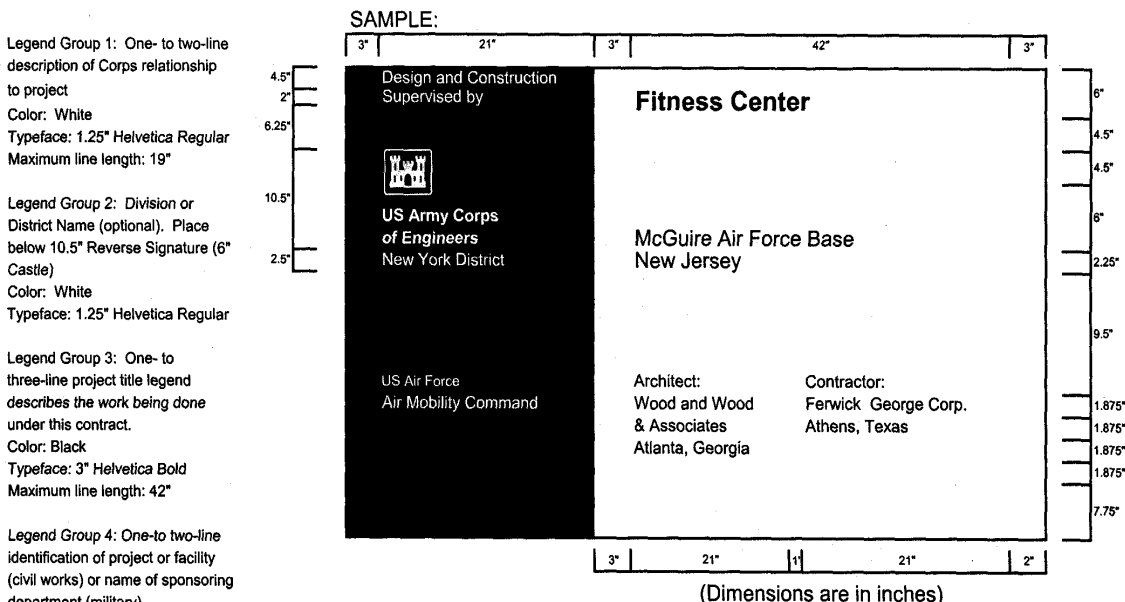
- (1) Betterments: Any portions of the accepted proposal, which both conform to and exceed the provisions of the solicitation.
- (2) The provisions of the solicitation. (See also Contract Clause: SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION.)
- (3) All other provisions of the accepted proposal.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

(4) Any design products including, but not limited to, plans, specifications, engineering studies and analyses, shop drawings, equipment, installation drawings, etc... These are “deliverables” under the contract and are not part of the contract itself. Design products must conform with all provisions of the contract, in order of precedence herein.

PROJECT IDENTIFICATION SIGN MILITARY PROJECT

The graphic format for this 4' x 6' sign panel follows the legend guidelines and layout as specified below. The large 4' x 4' section of the panel in the right is to be white with black legend. The 2' x 4' section of the sign on the left with the full corps Signature (reverse version) is to be screen printed Communications Red on the white background. The castle insignia will be furnished by the Government in pressure sensitive vinyl for affixing by the Contractor. See attached sheet for fabrication and mounting guidelines.



Sign Type	Legend	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
CID-01	various	4' x 6'	4' x 4'	HDO-3	48"	WH-RD/BK

* Refers to the U.S. Army Corps of Engineers, "Sign Standards Manual", EPS-310-1-6.

SAFETY PERFORMANCE SIGN

The graphic format, color, size and type-faces used on the sign are to be reproduced exactly as specified below. The title with First Aid logo in the top section of the sign, and the performance record captions are standard for all signs of this type. Legend Group 2 and 3 below identify the project and the contractor and are to be placed on the sign as shown. Safety record numbers are mounted on individual metal plates and are screw-mounted to the background to allow for daily revisions to posted safety performance record.

Legend Group 1: Standard two-line title "safety is a Job Requirement", with (8" od.) Safety Green First Aid logo. Color: To match PMS 347
Typeface: 3" Helvetica Bold
Color: Black

Legend Group 2: One- to two-line project title legend describes the work being done under this contract and name of host project.
Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

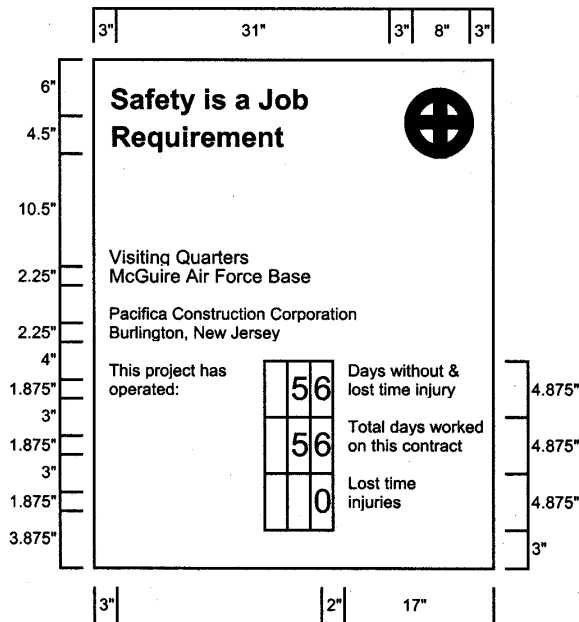
Legend Group 3: One - to two-line identification: name of prime contractor and city, state address.
Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

Legend Group 4: Standard safety record captions as shown.
Color: Black

Typeface: 1.25" Helvetica Regular

Replaceable numbers are to be mounted on white .060: aluminum plates and screw-mounted to background.
Color: Black
Typeface: 3" Helvetica Regular
Plate size: 2.5"x.5"

All typography is flush left and rag right, upper and lower case with initial capitals only as shown.
Letter- and word-spacing to follow Corps standards as specified in Appendix D. *

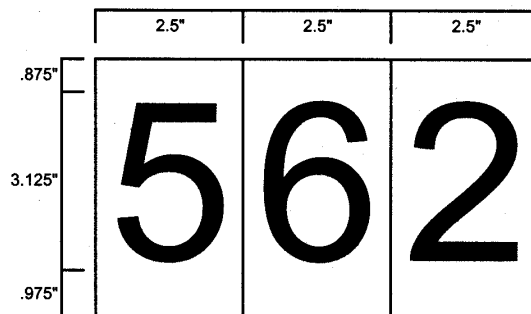


Dimensions inches.

See attached sheet for fabrication and mounting guidelines.

* Refer to the U.S. Army Corps of Engineers, "Sign Standards Manual", EPS-310-1-6.

Sign Type	Legend Size	Panel Size	Post Size	Specifications Code	Mounting Height	Color Bkg/Lgd
CID-02	various	4"x4"	4"x4"	HDO-3	48"	WH/BK-GR



Fabrication and Mounting Guidelines

As Construction Project Identification signs and Safety Performance signs are to be fabricated and installed as described below. The signs are to be erected at a location designated by the contracting officer and shall conform to the size, format, and typographic standards shown on the attached sheets.

The sign panels are to be fabricated from .75" High Density Overlay Plywood. Panel preparation to follow HDD specifications provided in Appendix B. **

Sign graphics to be prepared on a white non-reflective vinyl film with positionable adhesive backing.

All graphics except for the Communications Red background with Corps signature on the project sign are to be die-cut or computer-cut non-reflective vinyl, pre-spaced legends prepared in the sizes and typefaces specified and applied to the background panel following the graphic formats shown on the attached sheets.

The 2'x4' Communications Red panel (to match PMS-032) with full Corps signature (reverse version) is to be screen printed on the white background. Identification of the District or Division may be applied under the signature with white cut vinyl letters prepared to Corps standards. Large scale reproduction artwork for the signature is provided on page 4.8 (photographically enlarge from 6.875" to 10.5"). **

Drill and insert six (6) .375" T-nuts from the front face of the HDD sign panel. Position holes as shown. Flange of T-nut to be flush with sign face.

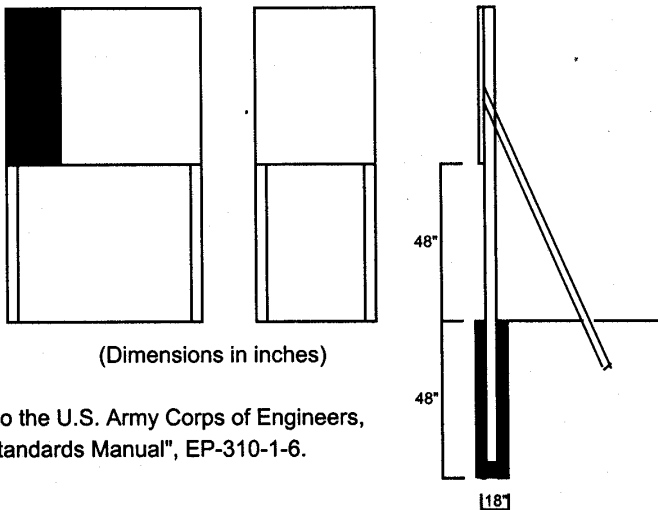
Apply graphic panel to prepared HDD plywood panel following manufacturers' instructions.

Sign uprights to be structural grade 4"x4" treated Douglas Fir or Southern Yellow Pine. No. 1 or better. Post to be 12" long. Drill six (6) .375" mounting holes in uprights to align with T-nuts in sign panel. Countersink (.5") back of hole to accept socket head cap screw (4"x.375").

Assemble sign panel and uprights. Imbed assembled sign panel and uprights in 4" hole. Local soil conditions and/or wind loading may require bolting additional 2"x4" struts on inside face of uprights to reinforce installation as shown.

Detailed specifications for HDD plywood panel preparation are provided in Appendix B. **

Shown below the mounting diagram is a panel layout grid with spaces provided for project information. Photocopy this page and use as a worksheet when preparing sign legend orders.



** Refers to the U.S. Army Corps of Engineers,
"Sign Standards Manual", EP-310-1-6.

Construction Project Sign Legend Group 1: Corps Relationship

1. _____
2. _____

Legend Group 2: Division/District Name

1. _____
2. _____

Legend Group 3: Project Title

1. _____
2. _____
3. _____

Legend Group 4: Facility Name

1. _____
2. _____

Legend Group 5a: Contractor/A&E

1. _____
2. _____
3. _____
4. _____
5. _____

Legend Group 5b: Contractor /A&E

1. _____
2. _____
3. _____
4. _____
5. _____

Safety Performance Sign

Legend Group 1: Project Title

1. _____
2. _____

Legend Group 2: Contractor/A&E

1. _____
2. _____

- - End of Section - -

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

SECTION 01000

GENERAL REQUIREMENTS

1.0 SUPERVISION BY THE CONTRACTOR

The following requirements, in addition to those contained in Section 00700 Contract Clauses: SUPERINTENDENCE BY CONTRACTOR, shall be met by the contractor:

1.1 Authority of Contractor Representative

The site representative appointed by the Contractor and approved by the Contracting Officer shall, as a minimum, have the following authority:

1.1.1 To negotiate and execute Supplemental Agreements having a value up to \$100,000.

2.0 AGE AND VALUE OF EQUIPMENT

If requested by the Contracting Officer, the Contractor shall provide documentation to establish the age and value of any equipment being utilized to perform work under this contract.

3.0 WORK SCHEDULE

If the Contractor intends to work outside the normal 40 hour Monday through Friday work week, he shall notify the Contracting Officer one full workday (Monday-Friday) in advance.

End of Section

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

SECTION 01010

DESIGN REQUIREMENTS

TABLE OF CONTENTS

SECTION NO.	SECTION TITLE	PAGE NO.
1.0	DESIGN OBJECTIVES	2
2.0	DESIGN SUBMITTAL REQUIREMENTS	4
3.0	CIVIL AND LANDSCAPE DESIGN	6
4.0	GEOTECHNICAL DESIGN	16
5.0	ARCHITECTURAL DESIGN	18
6.0	STRUCTURAL DESIGN	42
7.0	FIRE PROTECTION AND SECURITY DESIGN	52
8.0	MECHANICAL – HVAC DESIGN	58
9.0	MECHANICAL – PLUMBING DESIGN	75
10.0	ELECTRICAL DESIGN	82
11.0	ROOM-BY-ROOM REQUIREMENTS	95

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

SECTION 1.0 - DESIGN OBJECTIVES

- 1.1 **Scope of Work:** Design and construction shall comply with the specifications and requirements contained in this Request for Proposal (RFP). The design and technical criteria contained and cited in this RFP establish minimum standards for design and construction quality. The objective of this solicitation is to obtain a fully functional 1st Brigade Barracks Complex at Fort Drum, New York. The project consists of three buildings, each of which is a two-story facility of approximately 3,126 sq. m. (33,648 sq. ft.) (gross floor area as calculated per TI 800-01 and as elaborated on drawing A-1) designed to provide new Unaccompanied Enlisted Personnel Housing with quarters for 92 soldiers (total of 276 soldiers), community space and support facilities at Fort Drum, NY. The project site is located in Area 10300 on the east side of Fourth Street East, north of North Riva Ridge Loop and south of North Memorial Drive, with an extended connector road of 4th Armored Division Drive from the Fourth Street East to North Memorial Drive. Access to the site is via the 4th Armored Division Drive extension and includes two curb cut entries off the access road into each barracks parking lot. Construction is to match the architectural theme of adjacent buildings which were constructed in 1987-1990. Supporting facilities include parking, walkways and utilities.
- 1.1.1 **Site Area:** The site is described in the civil portion of the RFP and includes approximately 16.2 hectares (40 acres).
- 1.1.2 **Site Work:** Site work includes all design and construction of site features described in the RFP, including but not limited to, site planning, clearing, grubbing, grading, erosion control, site drainage, utility systems, pavements, pedestrian and vehicular circulation systems, landscaping, physical security measures, and site furnishings.
- 1.1.3 **Demolition Considerations and Requirements:** Refer to the existing site survey and proposed site layout plan. Demolition shall include vegetation and utilities as required to accomplish the work. Materials not owned by the Government and not used in construction shall be disposed off Government property. The Contractor shall obtain disposal permits from appropriate agency.
- 1.2 **Applicable Criteria:** Applicable design and construction criteria references are listed in Section 2.0 of this Section 01010. Criteria shall be taken from the most current references as of the date of issue of the RFP. Referenced codes and standards are acceptable criteria. Administrative, contractual, and procedural features of the contract shall be as described in other sections of the RFP.
- 1.3 **Design Quality:** The main objective of this solicitation is to obtain a 1st Brigade Barracks Complex including parking, walkways, utilities and associated site development within funds available, and to maximize design quality. Design quality is achieved through the optimization of interior and exterior planning, sustainability, selection of building systems for low-cost maintenance and operation, and an overall balance of aesthetics and functionality.
- 1.4 **Design Freedom:** Requirements stated in this RFP are minimums. A partial design including floor plans, elevations, sections and site plans is included in the RFP and is mandatory but may be modified slightly to accommodate construction requirements. The design provided is to assure functionality and design image desired by Fort Drum. Betterments are allowed but not considered as part of the selection.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

- 1.5 **Energy and Resources Conserving Features:** Public Law 102-486, Executive Order 12902, and Federal Regulations 10 CFR 435, require federal buildings to be designed and constructed to reduce energy consumption in a life-cycle, cost-effective manner using renewable energy sources when economical. Products designed to conserve energy and resources by controlling the amounts of consumed energy or by operating at increased efficiencies should be considered. Sustainable design criteria shall be followed to achieve a minimum rating of “Gold” per Sustainable Project Rating Tool (SPiRiT) in ETL 1110-3-491 (See Attachment #6 at end of this RFP). Minimum requirements for this project are identified in the following sections of this Section 01010.
- 1.6 **Force Protection & Anti-Terrorism Considerations:** Project site and building design and construction complies with or exceeds DoD Minimum Antiterrorism Standards as outlined in this RFP. Standoff distances shall be as shown on the drawings accompanying this RFP or as defined in other sections of this RFP. Exterior wall construction shall be reinforced 200 mm (8”) CMU back-up with face brick veneer as shown on the drawings accompanying this RFP.

SECTION 2.0 - DESIGN SUBMITTAL REQUIREMENTS

- 2.1 **Standards, Documents and Criteria:** The design requirements listed herein represent the minimum quality and quantity acceptable for the proposals and projects submittals. The latest edition of standards, documents and criteria referenced with this RFP, although not all attached within this RFP document, are modified to the extent indicated within this Section 01010. Each Contractor shall be responsible for obtaining the latest edition of any documents not attached as part of this RFP but referenced as criteria for the project. Requirements of this Section 01010 may delete, revise, add to or substitute for criteria contained in the referenced documents and this Section 01010 shall be deemed the controlling authority of any changes to the other referenced documents and criteria.

Reference documents can be obtained from Construction Criteria Base published by the National Institute of Building Sciences or online at <http://www.usace.army.mil/publications>. Design standards, reference documents and criteria applicable to the design of this project are referenced in the individual subsections of this Section 01010 to which they pertain. The latest edition of the following design standards, reference documents and criteria apply to all portions of the work whether or not they are referenced in the individual subsections of this Section 01010:

- 2.1.1 TI-800-01 - Technical Instructions - Design Criteria, U.S. Army Corps of Engineers
- 2.1.2 TI-800-03 - Technical Instructions - Technical Requirements for Design-Build, U.S. Army Corps of Engineers.
- 2.1.3 NANP-1110-1-1 - Manual of Standard Procedures, U. S. Army Corps of Engineers.
- 2.1.4 ETL 1110-3-491 - Sustainable Design, U.S. Army Corps of Engineers.
- 2.1.5 UFC 1-200-01, Design: General Building Requirements.
- 2.1.6 UFC 3-600-01, Design: Fire Protection Engineering for Facilities.
- 2.1.7 UFC 4-721-11.1, Unaccompanied Enlisted Personnel Housing (UEPH) Complexes, Volume I and II.
- 2.1.8 NFPA 101 - Life Safety Code.
- 2.1.9 New York State Energy Code.
- 2.1.10 Uniform Federal Accessibility Standards.
- 2.1.11 LEED Version 2.0 Reference Guide.
- 2.1.12 International Building Code (IBC).

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 2.2 **Design Standards:** Equipment, hardware and materials shall be standard manufactured items unless otherwise specified. Replacement parts shall be standard and readily available through commercial means. Discontinued products will not be accepted unless approved by the Contracting Officer.
- 2.3 **Codes:** The design, materials, equipment and installation shall be in accordance with the requirements of the listed codes and design manuals, with the requirements of this section, and with the listed specifications. The building shall be of a noncombustible construction classification.
- 2.4 **Metric Design:** This project shall be designed in metric in accordance with EIRS Bulletin 97-01. In most cases, metric SI unit measurement are indicated followed by the I-P value in parenthesis. Refer to Section 01415 - Metric Measurements in this RFP manual for specific requirements for preparing drawings and specifications.
- 2.4.1 **Mechanical Design:** Chapter 35 of the ASHRAE Handbook Fundamentals is a good source for metric conversion for mechanical design.
- 2.5 **Drawings:** Attached drawings provide information on the site and building layout and shall be used in the design of the facility. All of the drawings are available in electronic file form ("Read Only"). Microstation Version 8.0 drawings (.dgn format) will be available to the successful bidder.
- 2.5.1 **Field Information:** The utility information provided in the drawings is the best information available. It is provided to assist the Contractor during the design of this project. The Contractor is responsible for field verifying all information given. The Contractor is responsible for obtaining all information during design and requests for information shall be coordinated through the Contracting Officer. Any survey required to provide utility locations, manhole inverts, verification of existing features, etc. shall be the responsibility of the Contractor and shall tie into the project datum.
- 2.5.2 **Design Details and Standards:** The Contractor shall provide a design and construction package which uses the design details given or referenced in this RFP. Additional details shall be created by the Contractor as required, but shall conform to the requirements of this RFP and are subject to approval by Government.
- 2.6 **Specifications:** No technical specifications (Divisions 2 through 16) are provided with this submission. Refer to Section 01012 for a minimum listing of specification sections to be utilized in the preparation of the design and construction package. The Contractor shall edit the specifications as applicable to fit the site and project specific requirements. Additional geotechnical related specifications may be required as determined by the Contractor, or as recommended by the Contracting Officer. If additional geotechnical related specifications are required, the Contractor shall select and edit the appropriate specification from Unified Facility Guide Specifications (UFGS), subject to approval by the Contracting Officer.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

SECTION 3.0 - CIVIL AND LANDSCAPE DESIGN

- 3.1 **General:** As part of the building program for the 1st Brigade Barracks, the Contractor shall be responsible for site work design and construction of earth grades from which the building, connector road, parking areas and appurtenances are to be built as well as utility infrastructure to serve the project.
- 3.1.1 **Site Location:** The project site is located on the east side of Fourth Street East, north of North Riva Ridge Loop and south of North Memorial Drive, with a extended connector road of 4th Armored Division Drive from the Fourth Street East to North Memorial Drive (see sheet number C-1 & C-2).
- 3.1.2 **Building Siting:** The proposed project consists of three (3) buildings that are to be situated on the site south of the new extended connector road and in general conformance with the Site Layout Plan (Sheet C-2, C-5 & C-6). Each building is to have a standoff setback of 50 meters from all roads and parking areas. Two (2) of the buildings are to have a shared parking lot and shared courtyard area. The third building is to be configured in a similar fashion as the first two, with the anticipation of a future project to complete the symmetry.
- 3.2 **Requirements:** Site design requirements shall include preparation of site specifications; site layout; road way design, parking lot design; sidewalk design; storm runoff design; natural gas main trenching; electrical system trenching and applicable concrete pads; communication system trenching; final site landscaping as well as establishing site grades, elevations and erosion and sedimentation controls. Contractor shall submit all design calculations, including references and assumptions to the Contracting Officer's Representative (COR) for review.
- The site development concept for this project is shown on Site Plan(s) (sheet numbers C-1, through C-10). Contractor shall conform to the same basic site layout as shown on these drawings. The Government's intent in providing the concept site plans is to establish relationships and proportions from which the awarded Contractor can finalize design elements.
- 3.3 **Technical Criteria and Standards:** Design and installation shall conform to the latest editions of the referenced listed below, unless otherwise indicated herein.
- 3.3.1 U.S. Army Corps of Engineers, New York District, Architect Engineer Instructions (CENYD-AEI).
- 3.3.2 U.S. Army Corps of Engineers, NY District, Manual of Standard Procedures, NANP-1110-1-1.
- 3.3.3 TI-800-01 Design Criteria for Unaccompanied Enlisted Personnel Housing
- 3.3.4 Fort Drum Installation Design Guidelines
- 3.3.5 National Fuel Gas Code, NFPA 54 & Fort Drum Natural Gas Standards
- 3.3.6 TM 5-820-4, Drainage Areas for Other Than Airfields.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 3.3.7 TM 5-822-5, Chapter 3, Flexible Pavement for Roads, Streets, Walks and Open Storage Areas.
- 3.3.8 TM 5-813-1, Water Supply, Sources and General Considerations.
- 3.3.9 TM 5-813-5, Water Supply, Water Distribution.
- 3.3.10 TM 5-814-1, Sanitary and Industrial Wastewater Collection - Gravity Sewers and Appurtenances.
- 3.3.11 TM 5-814-2, Sanitary and Industrial Wastewater Collection - Pumping Mains and Force Mains.
- 3.3.12 TM 5-803-13 Landscape Design and Planting Criteria
- 3.3.13 TM 5-803-14, Site Planning and Design
- 3.3.14 FHWA Hydraulic Design Series No. 3 and No. 4 (HDS-3 and HDS-4).
- 3.3.15 FHWA Hydraulic Engineering Circular No. 12 (HEC-12).
- 3.3.16 FHWA, Manual of Uniform Traffic Control Devices, US Department of Transportation.
- 3.3.17 NFPA, Installation of Sprinkler Systems, NFPA 13.
- 3.3.18 NFPA, Private Fire Service Mains and their Appurtenances, NFPA24.
- 3.3.19 NFPA, National Fuel Gas Code, NFPA 54.
- 3.3.20 TM 5-822-2, General Provisions and Geometric Design for Roads, Streets, Walks, and Open Storage Areas.
- 3.3.21 Uniform Federal Accessibility Standards (ADA), Federal Register
- 3.3.22 Fort Drum Installation Guide
- 3.3.23 TR55 Urban Hydrology for Small Watersheds
- 3.3.24 New York State Stormwater Management Design Manual
- 3.4 **Project Site Surveys:**
 - 3.4.1 A ground field survey of the 1st Brigade Barrack project site has been performed as part of this package.
 - 3.4.2 The field survey includes full detail of the existing site conditions including: ground contours at ¼ meter (0.8 feet) accuracy, surface features (roads, utility poles, trees, etc.), and area and subsurface utilities taken from record drawings.

3.5 **Site Preparation:**

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 3.5.1 Site preparation shall include, but not be limited to, the clearing, grubbing of trees and shrubs and earthwork grading of site to obtain the building pad and site improvement's desired elevations.
- 3.5.2 Contractor is responsible for the removal and disposal of all unsuitable organic material (i.e. stripped vegetation; tree remnants, tree stumps, roots, limbs, and grubbing debris) and unclassified rock off Fort Drum at a licensed construction material landfill at the contractor's expense. Removal of stone walls shall be considered as unclassified rock as well as any ripped or blasted rock encountered during the site and utility infrastructure excavations.
- 3.5.3 Any clean excess cut material, free from debris, organics and/or unclassified rock, may be disposed of on Fort Drum at a selected area off Route 26 near the airport (see Location Map Sheet on sheet number C-1). Contractor to provide the volumes / weights of clean material that is backfilled and disposed of on Fort Drum.
- 3.5.4 Based on preliminary site visit and test borings there is a potential that the Contractor may encounter bedrock or large boulders during utility installation. Rock was encountered between 1 and 3 meters (3 to 9 feet) below grade. See the enclosed Subsurface Investigation Logs (Attachment 3).
If bedrock is encountered as part of the building foundation excavation, the bedrock, upon geotechnical review and evaluation by a licensed engineer, may be suitable and used to tie the building foundation system.
- 3.5.5 If unclassified materials (glacial boulders, impenetrable bedrock) are encountered, the Contractor is to achieve desired elevation by suitable methods. If blasting is required, blasting impact is to be evaluated. Blasting mats are required on Fort Drum for any blasting. Contractor is to obtain a blasting permit from Fort Drum prior to proceeding. Contractor is responsible to evaluate and determine if any encountered rock is suitable to bear upon and thus altering building foundation system.
- 3.5.6 Holes and depressions in the ground resulting from demolition operations shall be filled with satisfactory materials. Fill material shall consist of 'run of bank' sand and gravel material compacted to 90 % dry density by modified proctor and graded with a proper slope to shed runoff and to drain.

3.6 Storm Water Permit for Construction Activities:

- 3.6.1 SPDES Storm Water General Permit: As of March 2003, construction that results in disturbance of 0.40 hectares (1 acre) or more of total land area requires the preparation of a Notice of Intent (NOI) to discharge in accordance with the National Pollutant Discharge Elimination System (NPDES) requirements of the Clean Water Act. In New York, which is a NPDES-delegated state, this is accomplished through the administration of the State Pollutant Discharge Elimination System (SPDES) program. The following are requirements for Fort Drum:
 - 3.6.1.1 A completed NOI must be submitted through the Corps to Fort Drum Public Works (PW) Environmental Branch for review and approval at least thirty (30) days prior to the proposed commencement of construction activities (e.g. the initial disturbance of soils associated with clearing, grading, excavation, or other construction activities). The NOI shall include

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

a storm water pollution prevention plan that includes the Stormwater Management and Erosion Control Plan. PW will mail the final NOI to NYS Department of Environmental Conservation (DEC) at least seven (7) working days prior to the commencement of construction activities. The NOI form GP-02-01 can be found on the DEC web site.

- 3.6.1.2 A completed Stormwater Pollution Prevention Plan in conformance with NYSDEC standards shall be prepared, stamped by a New York State Professional Engineer, submitted for approval to the COR and posted for conformance during the duration of construction at the subject site.
- 3.6.2 General: No hazardous chemicals (toxins, corrosives, flammables, oil/grease, fuels, disinfection water, hydrostatic water, flushing water, etc.) shall be discharged into the ground surface, storm water drains or sanitary sewer system during construction activities. A Stormwater Management and Erosion Control Plan shall be submitted to Fort Drum PW for approval prior to inclusion in the construction documents.
- 3.6.3 Waste Profile: The Contractor shall be responsible to prepare the Waste Profile and the Land Fill Disposal Restriction Form and also sign them. Also, in accordance to the Waste Profile the Contractor shall prepare the Manifest for the shipment of the Hazardous Wastes and the authorized Government Representative shall sign the Manifest having an authorization letter from the Using Agency and the CENAN District Engineer and shall be certified by being trained in the EPA (RCRA) and DOT regulations for signing Manifests of Hazardous Wastes. The Contractor shall provide and include in the manifest of the Hazardous Wastes, the 24 Hour Emergency Response Telephone Number manned continuously day and night during the shipment of Hazardous Wastes.
- 3.7 Site Development: The awarded Contractor is to finalize the site design as shown on sheet numbers C-3, C-4, C-5, C-6, C-7, C-8, C-9, & C-10 and construct the entry, parking areas, pedestrian walks, utilities, storm drainage pipes and culverts, traffic signage, trees and landscaping.
 - 3.7.1 Roads: The project includes the construction of a new road “4th Armored Division Drive Extension” from the intersection of Fourth Street East and 4th Armored Division Drive east along a selected route to North Memorial Drive. The proposed road is to consist of approximately 875 meters (2,870 feet). The proposed road width and feature is to be of similar characteristics as the existing 4th Armored Division Drive roadway with an approximate driving lane width of 7.7 meters (25 feet) with 2.5 meter (8 foot) shoulders on both sides. Road construction cross section to be in conformance with Fort Drum standard pavement design as described in section 3.7.6.
 - 3.7.2 Parking Areas: 98 parking spaces are to be dedicated for each barrack. The project total is 294 parking spaces as shown on the Site Plan. Parking spaces shall be 90 degree orientation, 2.75 meters wide x 6.10 meters long (9’ x 20’) each. Aisle width shall be for two-way traffic, minimum width of 7.60 meters (25 feet). Pavement for parking areas shall be asphalt. Pavement thickness shall be in accordance with the Pavement Design section 3.7.6.
 - 3.7.3 Pavement Marking: Pavement marking color, type and width shall be in accordance

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

with the Manual of Uniform Traffic Control Devices. Pavement marking of roadways shall match existing and adjacent roads. Striping for parking spaces shall be 100 mm (4") wide and white in color.

- 3.7.4 **Signage:** Regulatory and directional signs shall comply with the Manual of Uniform Traffic Control Devices. Refer to Section 5.15.1 of specification 01010 for building identification signage.
- 3.7.5 **Edge of Pavement:** Pavement edges are to be flush with grade. The gravel base course shall extend 1.0 meters (3 ft) beyond the edge of pavement to act as a transition from the pavement to grass area and to help maintain the integrity of the edge of pavement.
- 3.7.6 **Pavement Design:** Pavement design shall be in accordance with seasonal frost penetration for the Fort Drum vicinity. As a minimum the asphalt pavement shall consist of the following (access drives, parking areas and formation area):
- 3.7.6.1 38 mm (1 ½") Asphalt Concrete Top Course (NYSDOT Item #403.170 Type 7f)
 - 3.7.6.2 63 mm (2 ½") Asphalt Concrete Binder Course (NYSDOT Item #403.170 Type 3)
 - 3.7.6.3 304 mm (12") Crushed Stone Base (NYSDOT Type 2) in 152 mm (6") lifts to 95 % density by the modified proctor test.
 - 3.7.6.4 405 mm (16") Total Depth of Pavement Section
 - 3.7.6.5 If site earthwork requires additional fill materials, fill is to a run of bank sand. Fort Drum maintains a sand borrow fill site, from which the contractor may obtain needed borrow materials. The Fort Drum borrow site is located on the East side of Route 26 off South Tank Trail (See Sheet C-1 for location). Any borrow fill material utilized beneath paved surfaces is to be compacted to 90% density by the modified proctor test.
- This pavement design shall be confirmed by the analysis of the soils data for this project site. Any deviations to the pavement composition and thickness shall be presented in a report with supporting calculations to the Contracting Officer for review and approval.
- 3.7.7 **Pavement Grade:** Finished pavement shall be graded to assure positive drainage across the paved areas. The minimum acceptable pavement grade in parking areas is 2% with a maximum grade of 5%.
- 3.8 **Excavated Materials:** Excavated materials shall be separated to satisfactory and unsatisfactory soil materials. Satisfactory material shall be disposed of at the on-base clean spoil disposal area located on the east side of Route 26 off South Tank Trail (See Sheet C-1 for location). Contractor to maintain and uniformly grade the on-base clean spoil disposal area. Dump piles are to be dozed off smooth and level with no slopes exceeding 20%. Disposal area shall be graded to provide positive drainage and covered with on site soil and seeded. Seed mixture shall be in accordance with Fort Drum standard recommendations for sandy soil.
- 3.9 **Haul Route:** The Contractor's haul route shall be from the project site location south down

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

Fourth Street, east on Ontario Avenue, exiting the base onto Great Bend Road (NYS Route 26) - (Contractor entry gate). The haul route from the site to the gate is approximately 4.0 kilometers (2.5 miles).

- 3.10 **Survey Controls:** The project monument and benchmark are shown on the Site Survey Plan (Sheet C-3 & C-4) as well as the Site Layout and Site Grading Plans (Sheet C-5, C-6, C-9 & C-10). Recoverable monuments shall be installed and used by the contractors for facility construction layout. Construction monumentation shall be installed and maintained at the contractor's expense.
- 3.11 **Contractor's Storage Yard:** The Contractor's storage yard shall be located within the project site.
- 3.12 **Grading:** Grading of the site shall be designed to have the optimal earthwork balance without the need for borrow. Care must be taken to avoid saturating the soils, which support the building foundation system. The open areas and parking areas shall be graded to eliminate ponding and provide positive drainage. Minimum grading in grass and paved areas shall be 2% and maximum of 5%. Grade surrounding the building should be set as follows: at foundation, exterior grade is to drop 152 mm (6 inches) below finish floor elevation, then slope away from the building at 10 % grade for a minimum of 6.0 meters (20 feet) horizontal to enhance positive drainage away from the building foundation walls.

If borrow materials become necessary to meet the desired grades, Contractor, upon written authorization from the Contracting Officer, may get sand fill from the Fort Drum borrow site located on the East Side of Route 26 off South Tank Trail (See Sheet C-1 for location). Contractor to maintain and uniformly grade the fill pile area. Excavations are to be dozed off smooth and level with no slopes exceeding 20%. Borrow site shall have a maximum depth of 4600 mm (15 feet) and shall be seeded in accordance with the Fort Drum standard recommendations of seeding sandy soils.

- 3.13 **Storm Runoff and Drainage:**
- 3.13.1 **Storm Runoff:** Storm runoff shall be calculated by the Rational Method defined in HDS-4. The site shall be designed to maximize overland runoff routes. Any collection and closed piping system deemed necessary shall be designed for the 10 year storm frequency. Culverts shall be designed for 50-year storm frequency. Runoff coefficients shall be 1.0 for roof areas, 0.9 for paved surfaces, and 0.2 for landscaped/grass areas.
- 3.13.2 **Existing/New Storm Drainage System:** The existing site is undeveloped and is drained by natural overland flow. The existing roads abutting the site are drained by open ditches. Road extensions shall match the existing road's open ditch drainage design. Culverts shall be provided at all driveway access and roadway intersection to maintain continuity of drainage flow in the ditches. On-site drainage shall be by open swales as much as possible. Where closed drainage system is necessary, the storm drain lines shall be sized in accordance with TM5-820-4, appendix B. The minimum pipe size shall be 381 mm (15"), sloped to provide a minimum velocity of 0.76 m/sec (2.5 ft/sec) for actual flow in the pipe. Calculations for the flows shall utilize a value no greater than 0.013 for Manning's roughness coefficient for the piping system. New manholes shall be provided at all change in pipe direction, grade or elevation, and where pipe lengths exceed 76 m (250').
- 3.13.3 **Stormwater Mitigation:** The site is to be designed to be in conformance with the EPA

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

Clean Water Act Phase II stormwater requirements as adopted and administered by New York State under The State Pollutant Discharge Elimination System (SPDES) GP02-01. As such on site stormwater control shall be designed in accordance with the New York State Stormwater Management Design Guide which thoroughly describes the acceptable analysis, design and implementation of mitigation facilities.

- 3.14 **Utilities:** Utility connections shall be provided as required below. The location of the service line laterals for water, sanitary sewer, gas, electrical lines, and communications lines shall be coordinated between the building's service points and the location of the mains.

Provide marker tape and tracer wire for all underground utilities. Tracer wire test stations and termination to be contained in a cast iron, accessible weatherproof box. Test stations to be located at 150 meter (500 ft) intervals and the termination of the utility. It shall be the Contractors sole responsibility for cost and repair of any existing utility damaged or disturbed during the course of construction.

- 3.14.1 **Existing Utilities:** Existing utilities are shown on the Existing Condition Plan (drawing C-3 & C-4), as could be located by surface survey and plotted from record drawings. The Contractor shall be responsible for verifying the existence, location, size, depth and condition of the utilities.

3.14.2 **Water:**

- 3.14.2.1 **Fire Hydrants:** Valves shall be provided at beginning of service line off a water main and on each branch lateral. Provide new hydrants within 45 m (150') of main entrance. All hydrants shall be dry-barrel type painted to match the base hydrant color with 125 mm (5") 'Storz' connections. The Contractor shall coordinate the hydrant color with the Contracting Officer. The hydrant lateral shall be 203 mm (8") diameter with a 203 mm (8") gate valve.
- 3.14.2.2 **Valve and Valve Boxes:** Valve boxes shall be provided for each new valve. Valve boxes in traffic areas shall be selected to sustain anticipated loads.
- 3.14.2.3 **Burial Depth:** Water lines shall have a minimum of 1.67 m (5'-6") of earth cover to maintain the water line below the frost penetration depth of 1.67 m (5'-6") at Fort Drum.
- 3.14.2.4 **Water Meters:** A water meter is required for the service line for this facility. The meter shall read in gallons and be connected to the "Trane Tracer" system. The meter is to be located within the mechanical room of the building.
- 3.14.2.5 **Existing Water System Pressures:** Water pressure at the site water main is provided in Attachment 2. This information shall be used for sizing the domestic water line and designing the fire protection system.
- 3.14.2.6 **Water Line Materials:** The water lines are to be concrete lined ductile iron (CLDI) or C900 Polyvinyl Chloride (PVC). Provide for thrust blocks, tie rods, or restrained joints at pipe fittings.
- 3.14.2.7 **Limit of Work:** Site water main construction is to be completed to within

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 1.5 meters (5 feet) of the building. Site contractor to coordinate with building plumbing contractor for location connection of service to the building.
- 3.14.2.8 Testing and Chlorination Requirements: To meet NFPA 24 and AWWA C651 as well as local Department of Health Standards. Disinfected water must be discharged to the sanitary sewer system. 48 hour notice and approval from the COR and the Fort Drum Public Works Environmental Branch must be obtained. The disinfection water is required to be neutralized before it enters the sanitary sewer system.
- 3.14.2.9 Construction Connections: Any connection to the Fort Drum Potable water supply for construction purposes must be protected by an approved backflow device (RPZ) supplied by the Contractor and said device is to have a current inspection.
- 3.14.3 Sanitary Sewer: A sanitary sewer lateral shall be designed to convey sewage produced by the building. The building lateral shall provide the maximum slope attainable while meeting the burial depth criteria for the line. The minimum size diameter for the sanitary sewer lateral shall be 203 mm (8").
- 3.14.3.1 Manholes: Manholes shall be provided on the sanitary sewer lateral at every change in grade, elevation or pipe direction.
- 3.14.3.2 Burial Depth: Sanitary sewer lines shall have a minimum depth of 1.67 m (5'-6" ft) of cover or as required to meet the existing sewer inverts.
- 3.14.3.3 Sanitary Sewer Line Materials: Sewer pipe is to be SDR 35 PVC with Cast Iron Hub and Spigot beneath structures.
- 3.14.3.4 Sanitary Sewer: The design shall be in accordance with AFM 88- 11, Volume 1, Sanitary and Industrial Wastewater Collection - Gravity Sewers and Appurtenances and AFM 88-11, Volume 2, Sanitary and Industrial Wastewater Collection - Pumping Mains and Force Mains.
- 3.14.3.5 Limit of Work: Site sanitary sewer main construction is to be completed to within 1.5 meters (5 feet) of the building. Site contractor to coordinate with building plumbing contractor for location connection of service to the building.
- 3.14.4 Gas: Interruption of gas service to adjacent facilities, during construction, shall be minimized and restricted to the hours as permitted by the Contracting Officer. The gas service line shall be designed in accordance with the National Fuel Gas Code, NFPA 54 and Fort Drum Natural Gas Standards.
- 3.14.4.1 Valve and Valve Box: A gas valve shall be provided for the service line. The gas valve shall be Poly Ball Valve and shall conform to ASME B16.40. Valves in sizes from 13 mm to 305 mm (½" to 12") shall be made of polyethylene and meet or exceed the criteria of ANSI B16.40 and ASTM D-2513. Valve is to include a fused body shell to eliminate all potential leak paths. Shutoff to be Bubble tight with dual elastomeric seats. Install purge points to allow for purging and charging of the gas system according to NFPA 54.
- 3.14.4.2 Burial Depth: The minimum cover depth for gas mains and service lines

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

shall be 760 mm (30 in).

- 3.14.4.3 Gas Meter, Regulator and Strainer: A gas meter and regulator shall be provided for the building. The gas meter shall have a permanent bypass line to facilitate removal of the meter without disruption of service and shall have a pulse device for interface with EMCS. The meter and regulator shall be located within the fenced mechanical yard and shall be protected from weather conditions. A strainer shall be provided upstream of the gas meter.
- 3.14.4.4 Gas Line Materials: Materials for gas lines shall be Type II high density polyethylene with the PE 3408 designation. Transition from underground to above ground piping shall be by anodeless riser.
- 3.14.4.5 In areas where thermoplastic buried gas pipeline is in close proximity to buried underground electrical cables and communication lines, adequate separation 2.5 meters (8.2 ft) or concrete encasement of the gas line is required to protect the physical integrity of the gas supply / service pipeline.
- 3.14.5 Fire Department Connection: Provide for a 127 mm (5 inch) diameter fire department 'storz' connection at the edge of the parking lots for an external connection to each building sprinkler systems. A 152 mm (6 inch) 'dry' main constructed with concrete lined ductile iron (CLDI) or C900 PVC pipe is to run from the building to the 'storz' connection. This 'dry' main is to be brought within 1.5 meters (5 feet) of the building(s) by the site contractor and marked so that the building plumber can connect. This fire department 'dry' main is to be terminated adjacent to the parking lot(s) with a check-valve (within a reinforced concrete valve pit), riser and 127 mm (5 inch) 'Storz' connection. At this termination the riser is to be protected with a painted, concrete filled steel bollard.
- 3.15 Electrical and Communications: For electrical and communications service lines, refer to Section 10.0 of Section 01010.
 - 3.15.1 Site Lighting: For site lighting design and requirements refer Section 10.0 of Section 01010.
- 3.16 Site Amenities:
 - 3.16.1 Dumpster Pad: Provide for a 3.65 meter (12 ft) by 3.65 meter (12 ft) by 203 mm (8") thick reinforced concrete dumpster pad. Concrete pad to be extended so that front wheels of dumpster truck are on the concrete pad when lifting and placing dumpster.
 - 3.16.2 Sidewalks: Reinforced concrete sidewalks are to be provided on the site as indicated on the site plans (see sheet C-5 & C-6). Sidewalks are to consist of 31,000Kpa (4500 psi) concrete with welded wire mesh reinforcing. The minimum concrete thickness of the sidewalks are 150 mm (6 inches) with 203 mm (8inches) of Crushed Stone Base (NYSDOT Type 2) in 102 mm (4") lifts to 95 % density by the modified proctor test. Expansion joints shall be located a minimum of 6 meters (20 feet) on center with sealed control joints located a minimum of 1.5 meters (5 feet) on center. Sidewalks are to have a minimum slope of 1½% and a maximum slope of 5 %. Sidewalks are to be broom finished.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 3.16.3 Basketball Court: Within the proposed asphalt paved formation area, Contractor is to provide for a full court basketball area, inclusive of commercial grade steel cantilever posts, rectangular aluminum backboards, triple reinforced solid steel rims and 75 mm (3") wide white striping of the court boundaries, mid-court line, and free throw lane. Note the formation area is to be paved in accordance with the pavement section described in section 3.7.6.
- 3.16.4 Pavilion: Open air pavilions are to be provided as located on site plan sheets C-5 and C-6 and detailed on A-6.
- 3.16.5 Barbeque Grills: Provide two barbecue grill per pavilion. Mount grill in 1200mm X 1200mm X 300mm concrete pad reinforced with #4 bars at 300mm o.c. each way. Grill shall have two separate cooking grates that are adjustable to 4 levels. Slots for grate adjustment shall be designed to resist theft. All grill handles shall have heavy-duty cool spring handles designed for public use. The grill bars shall be 1/2" steel welded on 1" centers. Each grill shall measure 14" x 36" giving a total of 1008 sq. in. of cooking surface. Model shall feature a 10" x 28" x 3/16" utility shelf that provides a convenient work space. The fire box shall be 3/16" thick steel that is 36"W x 28"D x 10"H with a large formed ash lip to reinforce the fire box and help prevent hot coals from falling out. The fire box shall be strengthened on the bottom with supporting gussets and mount on a single 4" square steel pedestal with a 12" x 12" x 3/8" base mounting plate. Theft-deterrent base attachment. Full rotation for draft control. Steel construction. Complete unit shall be finished in non-toxic, heat and rust-resistant black enamel. Unit weight shall be a minimum of 200 lbs.
- 3.16.6 Drinking Fountains with Hose Bib Attachment: Provide one drinking fountain per pavilion. Drinking fountain to be surface mounted, steel pedestal drinking fountain to include: one jug filler, one side mounted vandal resistant ADA accessible receptor bowl with bubbler head and one hose bib with vandal resistant lock and key box. The valve system is to be freeze proof. All valves, valve boxes and backflow preventers shall be heavy duty type, municipal grade.
- 3.16.7 Concrete Bollards: Concrete bollards are to be provided on the site as indicated on the site plans (see sheet C-5 & C-6). Bollards are to consist of 203 mm (8 inch) diameter pipe filled with 27,600 Kpa (4000 psi) concrete with a foundation 1700 mm (5 ft 6 inches) below grade and extending to 1220 mm (4 feet) above grade.
- Removable bollards where required shall consist of sleeve type removable bollards.
- All bollards shall be painted brown with a 305 mm (12") yellow band around the top.
- 3.16.8 Landscaping: All disturbed areas shall be covered with stockpiled loam a minimum of 100 mm (4") and shall be seeded in accordance with the Fort Drum standard recommendations of seeding sandy soils. Contractor is to provide a complete "Landscaping Plan" as part of the final site plan construction set.
- 3.16.9 Foundation Drip Strip: Contractor to provide an 1.5 meter (4.9 feet) wide by 76 mm (3 inch) deep drip strip at finished grade around each building. The drip strip is to include geo-synthetic fabric and colored #2 stone (colored to match the brick) along with black aluminum edging

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

SECTION 4.0 - GEOTECHNICAL DESIGN

- 4.1 **General:** The geotechnical aspects of this project include, but are not limited to, the foundation, soils, soil mechanics design, pavements and related items.
- 4.2 **Requirements:** Geotechnical design requirements shall include preparation of geotechnical specifications; pavement and sidewalk joint layout, pavement and sidewalk plans, sections and details; and all foundation design, foundation notes as necessary, and drawings required for the project. Contractor shall submit all design calculations, including references and assumptions, to Contracting Officer's Representative (COR) for review.
- 4.3 **Government Furnished Items:** The Government will provide the items listed below as part of this RFP. The Contractor shall incorporate the Government furnished items into the design of the facility.
- 4.3.1 **Subsurface Investigation Boring Plan and Logs:** See Attachment #3.
- 4.4 **References:** The latest edition of the following technical criteria apply to the design, analysis and preparation of the geotechnical portions of this project. Additional criteria not specifically identified below shall also apply, if directly referenced in any of the listed documents.
- 4.4.1 Architectural and Engineering Instructions Manual, New York District, U.S. Army Corps of Engineers (NYD-AEIM).
- 4.4.2 AFM 88-6, Chapter 8, Standard Practice for Concrete Pavements.
- 4.4.3 AFM 88-7, Chapter 1, Pavement Design for Roads, Streets, Walks and Open Storage Areas.
- 4.4.4 EM 1110-2-1906, Engineering and Design, Laboratory Soils Testing.
- 4.4.5 EM 1110-2-1907, Engineering and Design, Soil Sampling.
- 4.4.6 New York State Department of Transportation, Standard Specifications, 1995, latest addenda.
- 4.5 **Additional Geotechnical Explorations:** In the event there are changes in, or additions to the scope of the project (beyond the facility limits, parking, site improvements and demolition) which require further geotechnical investigation, the Contractor shall be responsible for any additional subsurface exploration, laboratory testing and geotechnical design and analysis. The Contractor shall submit a proposed drilling, sampling and laboratory testing plan and associated costs to the Contracting Officer. Drilling and sampling shall be in accordance with EM 1110-2-1907 "Soil Sampling", dated 31 March 1972. All laboratory testing of samples shall be at a Corps of Engineers approved laboratory testing facility and shall be performed in accordance with EM 1110-2-1906 "Laboratory Soils Testing", dated 30 November 1970. A list of Corps of Engineers approved laboratory testing facilities will be made available upon request. The Contractor shall be responsible for all applicable clearances and permits and for the protection of all underground utilities from damage during field investigations. Utility clearances and digging permits are required prior to drilling on-base. On-post clearances and permits shall be coordinated through the Contracting Officer.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

The Contractor shall prepare a Foundation Design Analysis (FDA) including a narrative, data presentation and calculations. The FDA shall be prepared as an individual document to be included as an attachment to the design submissions. The FDA shall be provided to the Contracting Officer for review and approval. Receipt by the Government of the aforementioned submittals shall not release the Contractor from responsibility for an adequate design. Any geotechnical design and analysis performed in conjunction with additional geotechnical explorations shall be based on the technical criteria and references listed above (as applicable). All findings from such geotechnical explorations, testing, design and analysis shall be reported in the FDA.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

SECTION 5.0 - ARCHITECTURAL DESIGN

- 5.1 **General:** General construction of the building includes load bearing reinforced concrete masonry unit walls, precast concrete plank floors with concrete topping, and metal or wood framed roof construction. Interior bearing walls shall be incorporated to reduce framing, truss and plank spans. Exterior walls shall be brick and block cavity wall construction. The roof surface shall be standing seam metal. This building will receive heavy use/abuse and shall be detailed and constructed with appropriate materials and methods.
- 5.2 **Applicable Technical Criteria and Standards:** Design and installation shall conform to the latest editions of the referenced listed below, unless otherwise indicated herein.
- 5.2.1 New York State Energy Code
 - 5.2.2 International Building Code
 - 5.2.3 Unified Facilities Criteria UFC 3-600-01
 - 5.2.4 TI-800-01, 20 July 1998, Design Criteria for Unaccompanied Enlisted Personnel Housing (UEPH)
 - 5.2.5 DD1391- latest edition for 1st Brigade Barracks
 - 5.2.6 AR 415-15 Sustainable Design, U.S. Army Corps of Engineers
 - 5.2.7 Federal Standard 795 for All ADA Issues
 - 5.2.8 NFPA 101, Life Safety Code
 - 5.2.9 Uniform Federal Accessibility Standards
 - 5.2.10 Glass Manufacturer Standards
 - 5.2.11 Americans with Disabilities Act Accessibility Guidelines
 - 5.2.12 UL Fire Resistance Directory
 - 5.2.13 NFPA 80, Standard for Fire Doors and Fire Windows
 - 5.2.14 Steel Door Institute, ANSI / SDI-100
 - 5.2.15 American Architectural Manufacturer's Association, AAMA 101-93
 - 5.2.16 Architectural Woodwork Quality Standards, Guide Specifications and Quality Certification Program, AWI
 - 5.2.17 Handbook for Ceramic Tile Installation, Tile Council of America
 - 5.2.18 ETL 1110-9-12 (FR), Engineering and Design, Standing Seam Roof Systems

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 5.2.19 Technical Manuals:
 - 5.2.19.1 TM-5-805-6 Caulking and Sealants
 - 5.2.19.2 TM-5-805-8 Builders Hardware
 - 5.2.19.3 TM-5-812-2 Firestopping
 - 5.2.20 AFM 885-3 Paints and Protective Coatings
 - 5.2.21 AFP 88-40 Signage
 - 5.2.22 ASTM E413-87 “Standard Classification for Rating Sound Insulation”
 - 5.2.23 TI-810-91 “Indoor Radon Prevention and Mitigation”
 - 5.2.24 UL/ULC-UL10C Positive Pressure Requirements for Fire Doors
 - 5.2.25 Design of Fixed Ladder Standards as defined by OSHA and ANSI.
- 5.3 **Floor Plans:** Contractors shall conform to the same basic floor plan, elevations and building sections as shown on the attached drawings. The Government’s intent in providing floor plans, elevations and building sections is to establish relationships and proportions. Minor deviations (less than 25 mm (1”)) from the dimensions shown on the plans will be accepted to increase construction productivity, to accommodate standard material sizes, to improve function, to conform to regulating codes and regulations, etc. Under no circumstances shall the building gross floor area (as calculated in accordance with TI-800-01 and shown on the drawings) exceed 3,128 sm (33,657 SF).
- 5.3.1 Sleeping rooms must each be a net minimum of 13 sm (140 SF). Closets within modules must each be a net minimum of 3 sm (32 SF). The closet and sleeping room walls within each module shall create a secure perimeter from adjacent modules and sleeping room/closets within the same module.
 - 5.3.2 Building area shall be calculated in accordance with TI-800-01, latest edition. Gross area shall include all enclosed spaces, inclusive of wall thickness.
 - 5.3.2.1 Corridors, stairways, lobbies, vestibules and covered walkways are calculated as half space. Half space area calculations shall be defined as being to the center of the block walls delineating the half space.
 - 5.3.2.2 Modules, communal spaces, mechanical and electrical support spaces all count as full space.
 - 5.3.2.3 Mechanical loft spaces (third floor) with an average ceiling height less than 2100 mm (6’-11”) shall not contribute towards gross building area. This distance shall be measured from the finished floor elevation to the bottom of the structure. Increase the heel height on the truss design as required to keep the bottom chord of the roof truss at the 6’-11” height, and maintain an exterior wall height sufficient to “catch” the ridge of the barracks wings plus a minimum 400 mm (1’-4”).

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

- 5.4 **Code Review and Fire Safety:** The jurisdiction having authority on code related matters is HQ, U.S. Army Corp of Engineers and coordination with Fort Drum.
- 5.4.1 The building shall be a minimum of Type 2b, non combustibile construction, and be fully sprinklered.
 - 5.4.2 The first floor spaces shall be separated from the second floor spaces by a 1-hour fire separation comprised of precast concrete plank.
 - 5.4.3 The second floor shall be separated from the attic space by a 2 hour fire separation comprised of precast concrete plank.
 - 5.4.4 The corridor walls shall be one hour fire rated.
 - 5.4.5 Walls separating sleeping modules from adjacent modules or common spaces shall be one hour fire rated.
 - 5.4.6 Exterior bearing walls shall be two hour fire rated construction. Exterior nonbearing walls are not required to be fire rated.
 - 5.4.7 Openings in exterior firewalls are not required to be protected.
 - 5.4.8 Attic spaces separated from all other areas of the building by 2 hour fire rated construction are not required to be sprinklered. If wood framing is incorporated into the roof structure (as permitted by UFC 3-600-01, 2-1.3), draft stops area required to divide the attic spaces into areas less than 280 sm (3000 sf). Draft stops are not required in attics constructed of non-combustible materials.
- 5.5 **Color Schedules:** Exterior colors shall comply with the current Exterior Colors Matrix. Interior colors and materials shall comply with the current Interior Colors Matrix. (See Attachment #1.) The successful Contractor must provide color boards to the Contracting Office's Representative and Fort Drum. Color boards must show samples of materials to be incorporated into the project, in the proposed color. Provide two color boards for each interior and exterior colors/products for Government review and approval.
- 5.6 **Barrier Free Design:** This facility will be occupied by able bodied soldiers, and accessibility is only required at the entrances and common areas on the ground floor. Living/sleeping modules are not required to be accessible. The second floor common areas are not required to be accessible.
- 5.7 **Concrete:** Exposed concrete is not permitted for major architectural elements. Building foundations and other structural elements of concrete shall be concealed through the use of stepped brick ledges, grading, etc. All minor wall concrete elements shall be sandblasted to produce a unified, matching color, texture and overall appearance. Any exterior finished architectural concrete shall be sealed against water using a clear, non-sheen, impregnating sealer.
- 5.7.1 A 50 mm (2") concrete topping shall be installed over all precast concrete plank on the second floor.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

- 5.7.2 All finish floors shall be level with tolerance of 3 mm (1/8") from finish floor elevation in 3 m (10'). This variation, if it occurs, cannot be abrupt, but must taper so that 3 mm (1/8") variation occurs in not under 1.2 m (4').
- 5.7.3 All interior concrete surfaces shall receive a steel trowel finish. After all bleed water has evaporated from the surface, float to finish floor level, and steel trowel. After concrete has set sufficiently to carry the workmen's weight, burnish with as many trowellings as necessary to leave a dense, level, ringing hard finish free of trowel marks, drag marks, stipple or orange peel. After curing period recommended by manufacturer, mix and apply Concrete Floor Hardener in two, or three if required, coat application in strict accordance with manufacturer's instructions.
- 5.7.4 All exterior concrete surfaces shall receive a broom finish. After all bleed water has evaporated from surface, float to finish level and broom finish in direction perpendicular to traffic.

5.8 Masonry:

- 5.8.1 The exterior of the building shall be brick, matching brick found at Fort Drum. Coursing, color, accents, lintels and other exterior architectural features shall be in compliance with the Exterior Colors Matrix (see Attachment #1) and consistent with neighboring buildings. Photos of the existing buildings are included with this RFP for the Contractors' information only (see Attachment #4). Exterior elevations and details shall, at a minimum, comply with the drawings and details supplied with this RFP. Colors of brick and exterior building products shall be in accordance with the "Exterior Colors for Fort Drum Architectural Theme" matrix, latest edition. Refer to the attached matrix, using Zone 2 to determine color and brick type. All colors are subject to the approval of Fort Drum. Brick shall not extend below grade. Tool all joints in brick and CMU. The Successful Contractor must submit brick samples and construct a sample wall for review and approval by the Contracting Office's Representative. Samples must be representative of the product and color range to be incorporated into the project.
- 5.8.2 All walls within occupied spaces shall be concrete unit masonry. Refer to Section 6 for further information.
- 5.8.3 Exterior walls must be constructed of 400 mm (8") CMU with moderate reinforcing (0.15% ratio of reinforcing to cross sectional area of masonry) minimum.
- 5.8.4 Brick lintels over windows, louvers and doors shall be painted loose steel lintels. Steel lintels shall be sandblasted to SP-10 and painted with 2 coats two part epoxy paint. Each coat shall be 6-8 mils DFT. Color to match window frames. CMU wall lintels shall be bond beams. Window sills shall be brick, slope to the exterior.
- 5.8.5 Walls separating mechanical rooms from the building shall be 200 mm (8") masonry, grouted solid, 2 hour fire rated.
- 5.8.6 Split face CMU veneer at the exterior wall shall be cast with an integral waterproofing agent.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 5.8.7 Outside corners of interior CMU walls shall have bullnose radius corners.
- 5.8.8 Provide flashings at all window heads, window sills, base flashing, door heads, control joints, etc, in accordance with the Technical Notes on Brick Construction, as prepared by the Brick Industry Association.
- 5.8.9 Provide eye and pintle type adjustable hot dipped galvanized wall anchors. Design anchors for seismic reactions when required by structural requirements of this section.
- 5.8.10 Provide mortar net above base flashings in all wall cavities to catch and permanently suspend mortar droppings in masonry cavity walls above the level of the flashing and weeps, so blockage of weep hole vents can't occur. Mortar net shall be manufactured of high density polyethylene (HDPE) or nylon strands woven into a 90% open mesh. It must not react with common building products, including PVC, polystyrenes, copper, rubberized asphalt, lead, stainless steel or galvanized metal. It must not absorb or trap moisture, not support mold or fungus, and not be inedible by insects. It must not degrade as a result of temperature variations and be designed to last for the life of the building.
- 5.8.11 Contractor shall provide building control and expansion joints in accordance with the guidelines of the Brick Institute of America. Control joints shall be provided at the wing wall extensions.
- 5.8.12 Precast concrete accents shall include all anchoring devices to anchor units to backup material and lintel angles. Precast accents shall be fabricated to produce a smooth, uniform color and finish. Submit samples to the Contracting Office's Representative and Fort Drum.

5.9 Miscellaneous Metal:

- 5.9.1 Access ladders with cage enclosures shall be provided in the mechanical rooms, from the ground floor to the mechanical penthouse. These must be of welded steel, designed and fabricated to meet OSHA safety standards. A roof hatch shall separate the third floor mechanical penthouse from the second floor.
- 5.9.2 Railings shall be fabricated of 40 mm (1½") standard weight steel pipe with prefabricated ells welded into all intersections. Railings shall conform to NFPA 101, and follow the rake of the stairs, at 900 mm (3') above the tread, measured at the nosing. Handrails shall extend past the top riser by 300 mm (1'). Handrails shall extend past the bottom riser by 1 tread plus 300 mm (1'). Railings shall be configured to not permit a 100 mm (4") sphere to pass through any portion of the railing, with the exception of the triangular space formed by the tread, riser, and lowest rail. Railings at open floor areas shall extend to 1200 mm (4') above finished floor.

5.10 Wood:

- 5.10.1 The use of wood shall be limited to fire rated shelves and cabinetry, millwork, plastic laminate mounting panels and unexposed fire retardant treated nailers, roof curb blocking shims, or backing for flashing. Wood paneling wall finishes are not permitted. Wood roof trusses and/or framing are permitted in the attic spaces only (see draft stop requirements required by UFC 3-600-01).

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

- 5.10.2 Cabinets and Counters: As a minimum, cabinets shall be CUSTOM grade in accordance with AWI standards, fire retardant laminate over fire rated plywood. Use only plywood as backing at sink counters. Use only solid wood or plywood for cabinets. Particle board may be used for shelving and cabinet floors and backs. Interior of cabinet finishes may be melamine or plastic laminate. Wood grain laminates are not acceptable.
- 5.10.3 Cabinet Finish: The finished material of exposed fronts and ends of cabinets, door and drawer fronts shall be 3 mm (1/8") PVC, bullnosed plastic laminate (not self-edged) or stained wood.
- 5.10.4 Cabinet Guides: Top mounted center drawer guides will not be permitted. Cabinet drawer guides shall be a minimum of .90 mm (.04") steel with double rollers, heavy duty commercial type.
- 5.10.5 Cabinet Hardware: Cabinet hardware shall conform to ANSI 156.9. Cabinet hinges shall be concealed offset and self-closing spring loaded "European" style, commercial grade.
- 5.10.6 Plastic Laminate: Base cabinets only at the bathroom lavatories shall be of plastic laminate construction. Countertops and base and wall cabinets in the Serving area of sleeping modules shall be constructed of plastic laminate to the minimum criteria listed above. Wall cabinets at the Serving area shall extend to the underside of the scheduled ceiling, without the need for soffits. Unit kitchens which accommodate the specified appliances will be permitted. Folding tables in the Laundry room shall be plastic laminate and supported by steel wall brackets or pipe columns bolted to the floor. All plastic laminate countertops and work surfaces shall be of high pressure laminated plastic, with heat resistive adhesive, fully formed with a continuous sheet of plastic. Folding tables only (not serving area counters) may be constructed with particle board. Provide bullnose at front edge and top of backsplash. Self-edging is not permitted. Post formed counters are not acceptable.
- 5.10.6.1 Serving Area Appliances: The serving area must include:
- a. A microwave shelf to hold a Whirlpool MT4140SKB0 microwave (supplied by Fort Drum). Shelf area shall include a GFCI outlet.
 - b. Space for a refrigerator, 0.255 cubic meter (9 cubic foot) (supplied by Fort Drum). Approximate refrigerator size is 610x610x1500mm (24"x24"x59"). Wall behind refrigerator shall include a GFCI outlet.
 - c. A two burner cooktop (equal to Kenyon B49511 Alpine 120 volt, 2 burner smooth top ceramic glass cooktop, 165 mm (6.5 inch) (1200 watt) and 200 mm (8 inch) (1200 watt) burners) and recirculating range exhaust hood, 600 mm (24") wide, 115 volt, 2.0 amps, two (2) speed system with filter and light included. Direct connection required. Refer to mechanical requirements of this section.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

- 5.10.7 CQ Desks: Desks shall be built in, with scheduled power, phone, data, and cable TV jacks. Construct a raised floor area for the space behind the desk. Desk shall consist of a 300 mm (1 foot) deep transaction top at 1067 mm (42") above finished floor (AFF) and a 600 mm (2 feet) deep work surface at 750 mm (2'-6") AFF. Provide 2 heavy duty steel file cabinets below the work surface for storage and countertop support. Provide additional work surface support brackets as required.
- 5.10.8 Solid Surface Material Countertops at Toilet Rooms: Countertops at the Bathroom lavatories in sleeping modules shall be of minimum 13 mm (½") thick solid surface material, including granite, resin, stainless steel (min. 16 gage), or solid surfacing (i.e. Corian). Exposed outside corners shall be filleted, chamfered, or radius profiles. Backsplash and lavatory bowls shall be integral with the countertop.
- 5.10.9 Exterior Canopy Support Brackets: Brackets shall be High-density polymer cast around steel pipe. Polymer shall be fire rated Class I material.
- 5.11 **Exterior Finishes:**
- 5.11.1 Exterior Soffits and Fascias:
- 5.11.1.1 Shall be low/no maintenance.
 - 5.11.1.2 Provide continuous ventilation.
 - 5.11.1.3 Shall be screened and sealed to resist insect intrusion.
 - 5.11.1.4 Shall be pre-finished aluminum or steel to match the standing seam metal roof. Contractor may select from painted or anodized finishes per the attached color matrix (see Attachment #1).
 - 5.11.1.5 Soffits shall be securely attached to prevent uplift.
 - 5.11.1.6 Soffits shall extend 1075 mm (3'-6") past the brick of the exterior wall.
 - 5.11.1.7 Soffits at canopies and building entrances shall be architectural linear metal, anodized or painted to match the roof.
 - 5.11.1.8 Exterior walkways accessing building entrances are required to be covered with canopies to protect pedestrians from snow and ice sliding off the sloped roof. Mechanical room exterior doors, and exit only doors occurring in gable end walls require canopies sized to protect the door swing area only (minimum size 1500 mm (5'-0") deep x 2 times door width). Canopies must be secured to building structural elements, with support brackets as required and as shown on drawings.
- 5.11.2 Standing Seam Metal Roof: An architectural, UL 90 standing seam roof assembly which conforms to ETL (Engineering Technical Letter) 1110-9-12 shall be provided for the building roof area.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 5.11.2.1 Standing seams shall be a minimum of 40 mm (1½") high. Seams shall be 400 mm to 600 mm (1'-4" to 2'-0") o.c. Roofing shall be fabricated from a minimum of 22 gauge G-90 galvanized steel or .040" aluminum.
- 5.11.2.2 Roof deck assembly shall be FM Class I, or UL listed as Fire Classified.
- 5.11.2.3 Fastening systems shall be completely concealed.
- 5.11.2.4 Color shall be factory applied fluoropolymer-polyvinylidene fluoride (PVDF), painted finish (equivalent to Kynar 500) on galvanized steel systems, or anodized for aluminum systems, per the "Exterior Colors for Fort Drum Architectural Theme" matrix, attached.
- 5.11.2.5 Roof system shall be installed over a full underlayment of self sealing membrane, venting composite insulated roofing panel, and corrugated steel decking on the roof structure. Other than the composite insulated roofing panel, no insulation is to be included in the roof assembly, in accordance with the "Cold Attic" system described in the thermal insulation section. Areas noted as "Warm Duct Space" on plans shall be considered interior space, within the thermal envelope of the building. In accordance with UFC 3-600-01, paragraph 2-1.3, the roof framing may be wood trusses, light gage metal framing (LGMF) or LGMF trusses. When wood trusses are utilized, the attic and warm duct spaces must be subdivided with smoke barriers such that no one smoke area is greater than 278.7 sm (3,000 sf).
 - a. Self sealing membrane shall be cold applied, self adhering. It shall consist of a high strength polyethylene film coated on one side with a layer of rubberized asphalt adhesive. Membrane shall be UL Class A, a minimum 40 mils thick, with an elongation of 250% when tested in accordance with ASTM D412.
 - b. Venting composite insulated roofing panel shall be comprised of 25mm (1") polyisocyanurate insulation board, 50mm (2") air space (min. 85% free area), 19mm (¾") CDX plywood.
 - c. Corrugated steel decking shall be designed in accordance with the roof loading and framing spacing.
- 5.11.2.6 No mechanical equipment is permitted on top of the metal roof. Penetrations for plumbing vents, etc, are to be kept to a minimum. Whenever possible, gable end walls shall be utilized in lieu of roof penetrations. Any roof penetrations shall be within 1500 mm (5'-0") of the ridge and securely anchored to the structure in at least two locations before penetrating the roof.
- 5.11.2.7 Exterior building wall height shall be sufficient to provide canopies at building entrances and exits completely below the fascia line, without the need for dormers. The penthouse roof fascia shall be high enough to eliminate valleys created by the intersections with the barracks wings roofs.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 5.11.2.8 Roof pitch shall be 4:12 to match existing Barracks construction. Minimum heel height of roof trusses at the exterior bearing walls shall be 400 mm (1'-4"). This ensures adequate airflow from the soffit into the attic space. Heel heights shall be increased to provide a minimum of 150 mm (6") free space above the specified insulation, without the use of foam baffles or compacting the insulation at the perimeter.
- 5.11.2.9 It is the responsibility of the designer to provide roof expansion joints to allow movement related to thermal expansion.
- 5.11.2.10 Fire Retardant treated plywood shall not be a part of the roof assembly.
- 5.11.2.11 Roof Warranty: The Contractor shall furnish a five year weather tightness guarantee, with a notarized signature of an authorized representative of the firm. Guarantee shall provide for repair or replacement, without cost to the Government, in the event of failure caused by faulty workmanship or materials, and cover all standing seam roofing, metal flashings and trim. Repairs to be made within 24 hours of notice. In addition, the manufacturer shall furnish a twenty-year warranty on the paint finish covering chalking, cracking, checking, chipping, blistering, peeling, flaking and fading. The manufacturers warranty shall have no dollar limit or prorating. The period of the guarantees shall commence upon completion and acceptance of the work involved as determined by the Contracting Officer.

5.11.3 Wall Louvers:

- 5.11.3.1 Weather resistant type, of extruded aluminum, with bird screens.
- 5.11.3.2 Made to withstand wind loads as described in Section 6.
- 5.11.3.3 Shall bear the AMCA certified ratings program seal for air performance and water penetration in accordance with AMCA 500 and AMCA 511. The ratings shall show a water penetration of less than .06kg/square meter.

5.12 Interior Finishes:

- 5.12.1 Interior finishes for exits shall be Class A only. Class A materials shall have a flame spread rating less than 25, and smoke developed rating less than 50.
- 5.12.2 Floor finishes shall be as described in the Room-by-Room Requirements, Section 11.0 of this Section, consisting of:
 - 5.12.2.1 Ceramic Porcelain Tile: As a minimum, ceramic tile shall be frost resistant, have a water absorption of 0.004%, and abrasive wear index of 234, a breaking strength of 365kg (800 pounds), and a coefficient of friction of 0.6. Provide slip resistant tile where appropriate. Ceramic tile at toilet rooms shall be installed over a setting bed, minimum 50 mm (2") thick, method F111-94 and F112-94 of the TCA Handbook. Where framed walls are permitted and scheduled for ceramic wall tile, install tile over cement board over stud framing in accordance with the TCA handbook.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

- 5.12.2.2 Quarry Tile: As a minimum, quarry tile shall have moisture absorption of 0.9%-3.0%, a breaking strength of 163-222 kg (360 – 490 pounds), a coefficient of friction of 0.7-0.9. Provide slip resistant tile where appropriate. Where a floor drain exists, quarry tile shall be in a setting bed in conformance with the TCA Handbook for Ceramic Tile Installation.
- 5.12.2.3 Grout: Epoxy type. Select a complimentary grout color to coordinate with the tile color. Obtain Contracting Officer's approval for grout color.
- 5.12.2.4 Concrete Sealer: Place sealer on exposed concrete floors, including mechanical room, janitor's closets and electrical rooms. Seal with a transparent, sprayable acrylic-based polymer solution that cures, seals, and dustproofs freshly placed concrete in a single operation. Sealer must comply with ASTM C 309.
- 5.12.2.5 Vinyl Composition Tile (VCT): 305 mm x 305 mm x 3 mm (12" x 12" x 1/8") thick type tile. Federal Specification: FS SS-T-312 Type IV. Seal and wax all vinyl composition tile prior to substantial completion. Use 2 coats sealer and 2 coats wax in accordance with tile manufacturer's instructions.
- 5.12.2.6 Stair Treads and Landings: Landings shall be finished with VCT. Stairs shall be constructed of concrete filled metal pans, with closed risers. Treads shall include a full-depth type 6063-T5 extruded aluminum casting to accept a replaceable abrasive insert. Abrasive filler shall contain not less than 65% virgin grain aluminum oxide, silicon carbide, or a combination of both, set in an epoxy-resin binder. Abrasive filler strips shall project 1.5 mm (1/16") above adjacent extruded aluminum frame. Apply clear lacquer to concealed bottoms, sides and edges of aluminum frames secured to concrete. Aluminum frames shall be surface applied, not cast into, the concrete steps. Use stainless steel fasteners. Nosings shall be non-combustible.
- 5.12.2.7 Rubber Entrance Mat: Provide a slab recess to accept a walk-off mat. Provide a floor drain under mat at building entrances. Provide mats at each of two vestibule entry doors. Aluminum frame system with abrasive insert. Frame set in grout leveling bed within slab depression. Flammability in accordance with ASTM E648, Class I, Critical Radiant Flux, minimum 0.45 watts/m². Slip resistance in accordance with ASTM D-2047-96, Coefficient of Friction, minimum .060 for accessible routes. Rolling load performance of minimum 500#/wheel.
- a. Frame of mill finish extruded 6105-T5 aluminum alloy tread rails joined mechanically by extruded 6061-T6 aluminum alloy key lock bars. (Welding or bolting shall not be permitted.) Shall be 6063-T5 aluminum alloy with 12.7 mm (1/2") exposed surface and a depth of 46 mm (1 13/16"). These assemblies receive 6.4 mm (1/4") thick heavy gauge support cushions 25.4 mm (1") long mounted to each continuous foot at 0.51 m (20") on center. Latex leveling screed by installer to ensure level base.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- b. Abrasive Insert shall include a flexible abrasive grit tape, bonded to a rigid aluminum tread insert. Tread insert shall be supplied in standard mill finish.

5.12.2.8 Epoxy Floor Paint Systems: 2 coat system, comprised of an epoxy primer and heavy duty non-skid epoxy coating. Epoxy primer shall be a low viscosity, 100 percent solids, high build, fast cure epoxy primer. The heavy duty non-skid epoxy top coat shall be a catalyzed epoxy, non-skid coating with chemical resistance to acids, alkalies, solvents, fuels, etc.

5.12.3 Wall Finishes:

5.12.3.1 The government desires low / no maintenance finishes to the greatest extent possible. Walls shall be finished with paint, unless noted otherwise in the Room-by-Room Requirements, Section 11.0 of this Section 01010.

5.12.3.2 The design shall consist of painted or tiled CMU walls only. Gypsum board and framing construction shall be limited to the infill of the soffit area between the top of the one-piece tub/ shower unit and the ceiling of the bathroom. Gypsum board on wood or metal stud walls are permitted within the attic space, to separate warm attic space from cold attic space.

5.12.3.3 Masonry walls at interior of mechanical rooms shall be painted.

5.12.3.4 Paint: Paint concrete masonry with a minimum of 2 coats high quality block filler primer and 2 finish coats eggshell latex paint. Paints shall meet or exceed the VOC and chemical composition limits of Green Seal requirements. Paint exterior walls with a vapor retarding, low perm paint between the block filler and finish latex paint.

5.12.3.5 Wall Base: 100 mm (4") high rubber meeting FS SS-W-40, Type 1 rubber; top set coved, 3 mm (1/8") thick, with premolded end stops and external corners. Use ceramic or quarry tile in areas with tiled floors. No base at CMU walls.

5.12.4 Ceiling Finishes:

5.12.4.1 Suspended Acoustic Ceiling Tile: SACT shall be 610 mm x 610 mm x 20 mm (24" x 24" x 3/4") thick tegular ceiling tile. NRC .60 or better.

5.12.4.2 Gypsum Board: Painted gypsum board ceilings in vestibules and above the closet, serving and bath areas within living/ sleeping modules. Suspended acoustical tile ceilings are not permitted within living modules. All gypsum ceilings shall have a smooth texture. Gypsum ceilings and walls in bath areas of modules shall be exterior grade moisture resistant type, minimum 15 mm (5/8") thick. Finish all gypsum board surfaces to Level 5 finish, as defined by GA-214-90, Levels of Gypsum Board Finish. Paint gypsum ceiling surfaces with one coat primer and 2 coats latex paint.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 5.12.4.3 Ceiling Heights: Minimum ceiling height is 2440 mm (8'-0"). Higher ceilings are appropriate in larger spaces. Minimum floor to floor height is 3250 mm (10'-8").
- 5.12.4.4 Painted Exposed Concrete Plank: Seal joints with flexible, paintable sealant. Paint with a minimum of 2 coats high quality block filler primer and 2 finish coats eggshell latex paint. Paints shall meet or exceed the VOC and chemical composition limits of Green Seal requirements. Paint second and third floor ceilings (concrete planks) with a vapor retarding, low perm paint between the block filler and finish latex paint.

5.13 Insulation:

- 5.13.1 Cold Roof Design: The attic space shall be adequately ventilated and insulated so as to maintain complete isolation of the roof surface from the heated interior space. No heating units or ductwork are permitted in the cold attic space. Any ductwork required by the final design to run above the concrete plank over the second floor shall do so within the thermal envelope. Attic trusses or equivalent framing shall be incorporated as required to maintain at least a 150-mm (6") roof-ventilation airway from the eaves through the cold attic spaces and out through the ridge vent.
- 5.13.2 Thermal Insulation:
 - 5.13.2.1 Insulation shall be UL listed as having a flame spread rating less than 75, and a smoke developed rating less than 150, except as allowed by UFC 3-600-01.
 - 5.13.2.2 Minimum 50 mm (2") rigid insulation shall be provided at all foundation walls of heated spaces. Extend from top of footing to underside of slab and 600 mm (24") along slab perimeter.
 - 5.13.2.3 Minimum R20 (I-P units) insulation shall be provided at all exterior walls. Required insulation values shall be achieved through a continuous foil faced polyisocyanurate rigid insulation board in the cavity between the brick and CMU. R20 value shall be met with listed aged R values.
 - 5.13.2.4 Minimum R48 (I-P units) insulation shall be provided between the heated space and the ventilated attic. Required insulation values shall be achieved through minimum of 100 mm (4") extruded polystyrene rigid insulation board placed directly on top of the concrete plank separating the second floor from the attic covered by unfaced fiberglass batt insulation at the bottom chord of the roof truss or framing.
 - 5.13.2.5 No loose or granular fill insulation is permitted.
 - 5.13.2.6 A vapor barrier shall be provided on the warm side of all surfaces separating heated from non-heated spaces. Vapor barriers may be closed cell foam, poly sheets or vapor retardant paint. Seal all cuts, breaks, joints and holes in the vapor barrier with a compatible low perm vapor retarding tape or sealant.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

5.13.2.7 At the corridors, an interstitial space below the thermal envelope and above the occupied space shall be incorporated for ductwork and electrical distribution. A precast concrete plank shall separate the second floor from the attic space. The underside of this plank shall be sealed and painted with a vapor retarding paint.

5.13.2.8 Acoustical Insulation:

- a. Ceiling tiles shall have an NRC of .60 or better.
- b. Acoustical privacy between sleeping rooms, and between the modules is required; STC = 48-55.
- c. Contain unisex (public) toilet rooms with sound attenuated construction above the ceiling. Either extend walls to the underside of the concrete plank or provide 100 mm (4") sound attenuating insulation at the ceiling.

5.13.3 Vapor Barriers:

5.13.3.1 Vapor retarding paint shall be applied in two coats, each 4 mils wet film thickness, to achieve a 1 perm vapor barrier rating.

5.13.3.2 At warm duct space, provide a 6 mil poly vapor barrier on the warm side of the walls and ceiling.

5.14 **Doors and Hardware:**

5.14.1 Exterior Doors:

5.14.1.1 Fire rated and insulated hollow metal access doors shall be provided from the third floor mechanical penthouse to the warm duct space, and from the warm duct space to each side of the cold attic space.

5.14.1.2 All non-glazed and non-fire rated exterior door assemblies, excluding storefront assemblies, shall have a polyurethane core foamed in place or laminated to each outer panel, with a minimum compressive strength of 1.4 kg/cm² (20 psi) and a minimum density of 28.8 kg/cm² (410 psi). Minimum required insulating value of U = .09 (R = 11.1).

5.14.1.3 All steel door frames shall be of minimum 16 ga. welded construction. Steel frames shall be sized to stay on brick coursing (i.e. 2100 mm (7'-0") high doors with 100 mm (4") head). All hollow metal door and frame assemblies shall be constructed as required by ANSI/SDI-100 to meet or exceed a heavy duty, Grade II, model 2, seamless hollow steel construction, and shall be constructed with flush end closures at the top and flush closures or recessed channels at the bottom. Hollow metal doors and frames shall be painted.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 5.14.1.4 Doors shall be a minimum of 2100 mm (7'-0") high. All fasteners shall be of aluminum, stainless steel, or zinc plated steel, and concealed by the framing system. Door and trim moldings shall be extruded of 6063-T5 aluminum alloy and temper. (ASTM B221 alloy GS 10A-T5). Overall U-factor of doors=0.67 or better. Heavy duty doors and hardware are required.
- 5.14.1.5 Hollow Metal Doors: Doors shall be Full flush, 1.2 mm (16 ga). cold-rolled steel, 45 mm (1-3/4") thick. Cores shall be impregnated cardboard honeycomb with top and bottom steel reinforcement. Edges shall include interlocking joints on lock and hinge edges with visible edge seams.
- 5.14.1.6 Fiberglass Reinforced Plastic Doors: Utilize FRP doors at exterior locations subject to weather exposure, including the stair exit doors, mud room door to vestibule, building entrances and Mechanical room doors. Install FRP doors in aluminum frames. Exterior doors shall be flush, insulated, smooth skin, 45 mm (1 3/4") thick.
- a. Doors: Door panels shall be constructed of 150 mm (6") main frame tube with insulating core. Door panels shall not rely on the core for primary strength. Wide stiles shall consist of 150 mm (6") tube with 5 mm (.188") wall thickness and 6 mm (.25") hinge side wall thickness. Subframes composed of smaller tube sections bolted together to meet the minimum 150 mm (6") requirement are not acceptable. Edge trim shall be completely repairable. Joints between main framing members shall be bolted with 9 mm (3/8") tie rods and welded. Polystyrene core shall be CFC and HCFC free. Doors shall include heavy steel reinforcing for door hardware, and include standard 10 year warranty with 25 year coverage against structural failure of the main frame of the door and delamination of the face sheets from the core. The doors at the stair exits and mud room shall include 125 mm x 500 mm (5" x 20") vision lites. Mechanical room doors shall be provided without vision lites. FRP doors in aluminum frames shall be provided at the two entry vestibule locations intended for occupant access to the building. Both sets of doors within each vestibule shall be identical, with wide stiles, wide intermediate rail, fully glazed top half, total 3/4 of the door glazed. Door stiles and framing constructed of extruded aluminum 6063- T6.
- b. Aluminum Frames for FRP Doors: Extra heavy duty Series, wall thickness of 5 mm (.188"), frame depth of 150 mm (6"), face dimension of 40 mm (1-1/2"), angle clip joint construction.
- c. Door Glazing: Typical glazing shall consist of 25 mm (1") insulated glazing panels (1 pane of 6 mm (1/4") thick laminated glass and 1 pane of 6 mm (1/4") thick tempered glass separated by a 12 mm (1/2") spacer). The inboard lite shall be of laminated safety glass and the outboard lite shall be tempered safety glass. Laminated glass shall consist of two nominal 3 mm (1/8") glass panes bonded together with a minimum of a 0.75 mm (.030") thick polyvinyl-butylal (PVB) clear fragment retention film.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

5.14.2 Interior Doors:

- 5.14.2.1 Interior doors at occupant areas shall be solid core wood doors in welded hollow metal frames. Interior doors at unoccupied areas (Warm attic space, Mechanical Penthouse) shall be flush hollow metal doors in hollow metal frames.
- 5.14.2.2 Hollow metal frames shall be painted in accordance with the interior color scheme. Interior hollow metal doors shall have 460 mm (1'-6") high stainless steel kickplates at the push side. Grout all hollow metal frames solid.
- 5.14.2.3 Vision Lites: Stairwell doors and the doors to communal spaces shall have 100 mm x 625 mm (4"x25") vision panels. Glazing in fire rated doors shall be 5 mm (1/4") clear fire rated safety glass, UL listed and approved. Non-rated doors shall be glazed with 5mm clear laminated safety glass.
- 5.14.2.4 Wood doors shall be of 5-ply construction, 44 mm (1-3/4") thick, with a bonded structural composite lumber core, stiles, rails, and crossband. Veneers shall be suitable for transparent finish, complying with the Hardwood Plywood and Veneer Association's DFV-1, Voluntary Standard for Sliced Decorative Wood Face Veneer. Veneers shall be matched to avoid barberpoling. Contractor shall determine species, slice and matching. Selections must be in accordance with the Interiors Color Matrix and receive the approval of the Contracting Officer. Matching edges and hardware blocking shall be provided. Doors shall be factory finished to industry standard TR-6. Installation shall be in accordance with Door and Hardware Institute standards.
 - a. Factory Finishing Requirements
 - i. Prefinish all wood doors at factory. Contracting Officer to select stain color.
 - ii. Prefinish all wood doors to AWI/WDMA Premium Finishing Systems per AWI Section 1500 and WDMA Section G-17.
 - iii. Finish doors using three coats of water-clear, 100 percent solids, Modified Acrylic Urethane, cured immediately with ultra-violet light.
 - iv. Prefinish system to meet or exceed the performance characteristics of AWI - "TR6" or equivalent WDMA System.
 - v. Factory seal all doors on all 6 sides using Manufacturer's Standard meeting these specifications.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

5.14.3 Hardware:

- 5.14.3.1 Door hardware and security requirements must be coordinated with the functional requirements shown on the plans, the Room-by-Room descriptions and the electrical security/ fire alarm system requirements of this RFP. Provide all hardware to meet the requirements of NFPA 101 Life Safety Code, UFC4-721-11.1, UFC3-600-01, and the International Building Code.
- 5.14.3.2 Door Hinges: Entrance vestibule and stair exit doors shall have tamper proof continuous geared hinges. Interior hinges shall comply with ANSI A8111; doors shall have a minimum of 1½ pair of Heavy Duty Butt Hinges. Exterior hinges shall comply with ANSI A5111; doors shall have a minimum of 1½ pair of Heavy Duty Butt Hinges. All out swing doors with keyed locksets shall have NRP non-removable pins. This includes all interior and exterior door hinges.
- 5.14.3.3 Security Mechanical Locks: Shall comply with ANSI A156.13 Series 1000 Security Grade 1 Dead Bolt Lock F18.
- 5.14.3.4 Locksets and Latchsets: Shall comply with ANSI A156.13 Series 1000 Security Grade 1, and meet Accessibility Code A117.1, NFPA 101 Fire Safety, NFPA 80 Life Safety and ULC-UL10C Positive Pressure. Mortise locksets to have escutcheon trim with lever handles that are ADA compliant. The locks shall be supplied with Best Mortise Cylinders to continue the Base Master Key System. The existing Fort Drum system is equal to Schlage Heavy Duty Commercial Lever Type with removable, 7 pin, Type L keyway, interchangeable core locks to be compatible with existing Fort Drum “Best” manufactured locks. Building entrance doors shall be keyed alike.
- 5.14.3.5 Panic Devices: Shall comply with ANSI A156.3 Type 1, Type 2, Grade 1, Accessibility Code A117.1, NFPA 101 Fire Safety, NFPA 80 Life Safety and ULC-ULC10C Positive Pressure. Panics to have lever trim handles that are ADA compliant. The panics shall be supplied with Best Cylinders to continue the Base Master Key System. Provide Fort Drum standard panic hardware with cylinder lock at all building entrances.
- 5.14.3.6 Hardware Finish: Standard finish for all Base hardware is Dull Chrome Builders Hardware Manufacturer’s Association A156.18.
- | | |
|----------------------------|----------|
| Steel Base Metal | BHMA 639 |
| Brass Base Metal | BHMA 626 |
| Stainless Steel Base Metal | BHMA 630 |
- 5.14.3.7 No master keying for this facility is permitted. Coordinate keying requirements with Fort Drum and the Contracting Office’s Representative (COR).

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 5.14.3.8 Door Closers: Shall comply with ANSI A156.4, Grade 1, Accessibility Code A117.1, NFPA 101 Fire Safety, NFPA 80 Life Safety and ULC-ULC10C Positive Pressure. Closers to be multi-sized with metal cover, Sex Nut & Bolts, separate adjusting valves.
- 5.14.3.9 Push Pull Plates: Shall comply with ANSI A156.6 J304/J405.
- 5.14.3.10 Kick Plate: Shall comply with ANSI A156.6 J102. Kick Plates shall be 4BE x .050 Wood screws for wood doors. Machine screws for Hollow Metal Doors.
- 5.14.3.11 Flush Bolts & Dust Proof Strike: Shall comply with ANSI 156.16.
- 5.14.3.12 Surface Bolts: Shall comply with ANSI 156-16 L84161.
- 5.14.3.13 Electric Wall Magnetic Hold Open: Shall comply with ANSI 156.15 Mag Door Holders to be supplied with proper spacers to meet the conditions at each door.
- 5.14.3.14 Thresholds, Weather Stripping, Astragals, Sweeps: Shall comply with ANSI A156.21- 1994.
- 5.14.3.15 Overhead Stops, Holders: Shall comply with ANSI A156.8 Grade 1.
- 5.14.4 Exterior Windows:
 - 5.14.4.1 Windows shall be aluminum, impact resistant, heavy duty commercial grade. Frames shall be of thermally broken aluminum, and shall have a minimum performance rating of AW65 per AAMA 101. All window systems shall include a thermally broken aluminum sub-sill. Window frames, mullions, and hardware must be designed to resist a static load of 7 kilopascals (1 psi) applied to the surface of the glazing. Frame and mullion deformations shall not exceed 1/160 of the unsupported member lengths. The glazing shall have a minimum bite of 25 mm (1") for both structural glazed and non-structurally glazed window systems. Design frame connections to surrounding walls to resist a combined ultimate loading consisting of a tension force of 35 kN/m (200 lbs/in) and a shear force of 13 kN/m (75 lbs/in). Design supporting elements and their connections based on their ultimate capacities. Window anchorage to the adjacent walls must be in accordance with the manufacturer's instructions to fully convey the window's maximum design loads to the wall. Locks on windows shall include sweep locks, auto head locks, and auto sill locks. Window manufacturer shall certify windows are in compliance with AAMA publication 902, "Voluntary Specification for Sash Balance", and design the operating system based on total sash weight and minimum operating force requirements. Windows in sleeping rooms shall be double hung, egress type. Windows in laundry rooms shall be sliders. Typical windows in commons areas shall be double hung or fixed, as shown on elevations.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 5.14.4.2 Finish shall be bronze anodized per Fort Drum Architectural Compatibility standards. The overall R value shall be minimum R2.
- 5.14.4.3 Glazing for all exterior windows shall be insulated glazing panels. The inboard lite shall be of Low E coated, laminated safety glass and the outboard lite shall be tempered safety glass. Laminated glass shall consist of two nominal 3 mm (1/8") glass panes bonded together with a minimum of a 0.75 mm (.030") thick polyvinyl-butylal (PVB) clear fragment retention film.
- 5.14.4.4 All exterior windows shall have horizontal mini-blinds. The blinds shall have .008 gauge, one inch wide horizontal aluminum slats, supported by braided ladders. All hardware shall be enclosed in a metal head. All operating hardware shall be machine clinched to head to assure perfect alignment. It shall be possible to tilt the slats to any horizontal angle by turning a transparent wand. Bottom of wands to extend within 100 mm (4") above window sill. Slat supports shall be braided of polyester yarn, the vertical component of which shall be not less than 1.1 mm (.045") diameter, nor greater than 1.7 mm (.068") diameter for maximum strength and flexibility with minimum stretch. Braided ladders shall support slats parallel and straight to assure proper tilt control and adequate overlap of slats. Distance between ladders shall not exceed 560 mm (22") and maximum 150 mm (6") to ends. Lift cord shall be of adequate diameter, braided of high strength synthetic fibers to provide minimum stretch and maximum strength and flexibility. All blinds shall have satin gloss finish, color to be selected by Fort Drum from standard colors.
- 5.14.4.5 Interior sills of exterior windows shall receive solid slate stools, nominal 25 mm (1") thick. Window jambs shall be painted bullnosed corner CMU. Window head at interior shall be painted CMU lintel.

5.14.5 Interior Windows:

- 5.14.5.1 Hollow metal window and door frames shall be incorporated into the walls at all multi-purpose rooms. Glazing of interior windows shall be minimum 5 mm (3/16") tempered glass. Meet fire resistance requirements consistent with wall construction.

5.15 **Specialties:**

- 5.15.1 Signage: Provide signage throughout the facility (interior, exterior, and site, as appropriate). All signage shall be in accordance with the ADA. The building shall have one primary roadside, two faced, stand alone, lit sign. This sign shall be provided and installed by Fort Drum. The Contractor shall provide electrical services to the sign location for site lighting by Fort Drum. Refer to site plan for location.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

5.15.2 Building Identification:

5.15.2.1 Room Identification: Living/ sleeping modules, Public access spaces, storage rooms, mechanical/ electrical rooms, communications room, and toilet rooms shall have room identification signs. Two signs shall be provided at each location- one mounted at eye level and one mounted near the floor. Module room doors shall have an insert frame permanently affixed at eye level. Insert frames shall be suitable for receiving identification cards of the roof occupants.

5.15.2.2 All exits shall be clearly marked.

5.15.2.3 All toilet facilities and fire extinguishers shall be marked with international symbols.

5.15.2.4 Restrictive areas shall be so labeled. Coordinate with Fort Drum personnel.

5.15.2.5 Signage shall be vandal resistant.

5.15.3 Mailboxes: The mail distribution room shall have 100 mailboxes, 9 parcel lockers and 1 mail collection box.

5.15.3.1 Mailboxes shall have rear access loading. Units shall be high security vault type, recessed into the wall, and constructed entirely of aluminum. Standard units shall be based on "A" size doors (130 mmH x 164 mmW (5 3/16" H x 6 15/32" W)). Each compartment shall measure 394 mm (15 1/2") deep. Mailboxes shall conform to the criteria contained in United Postal Service Publication 17, Type II Horizontal. Mailboxes shall incorporate the following salient features:

- a. Heavy-duty, non-corrosive combination lock.
- b. Interlocking device on hinge side of door to prevent insertion of prying tool
- c. Latch side of door to have vertical barrier to prevent access
- d. Horizontal and vertical rows of boxes fabricated and assembled in a single rigid unit and attached to a metal mounting frame
- e. Compartments constructed of .6 mm (.025") thick high-strength sheet aluminum alloy with vertical stiffeners
- f. Doors minimum 3 mm (1/8") thick, high-strength extruded aluminum reinforced vertically along both sides and center with integral ribs
- g. Tenant doors identified with engraved, 16 mm (5/8") high numerals
- h. Pressure-sensitive labels for loading identification

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- i. Compartment sizes: (Size A) 150 mmW x 125 mmH x 394 mmD (6"W x 5"H x 15-1/2"D).
- j. Separate snap-on trim for rear-loading units.

5.15.3.2 Parcel Lockers: Shall incorporate the following salient features:

- a. 1800 mm (72") high lockers, available in 4 or 5 door units standard
- b. 360 mm wide x 450 mm deep (1'-2" x 1'-6")
- c. Postal arrow lock for master lock, and dust proof cam lock for customer lock
- d. Rear loading, in-wall, no base
- e. US 28 anodized colors standard

5.15.3.3 Mail Collection Box: Shall incorporate the following salient features:

- a. Rear access- equipped with lift-off rear cover
- b. 4 mm (5/32") thick extruded aluminum front door
- c. Extruded aluminum frame
- d. Steel compartment
- e. Letter slot 19 mm high x 254 mm wide (3/4"H x 10"W)
- f. Engraved letters 25 mm (1") high
- g. Anodized aluminum finish

5.15.4 Toilet Accessories:

5.15.4.1 Toilet Accessories: Each sleeping module bathroom shall have:

- a. Towel Shelf With Towel Bar: Provide one surface mounted towel shelf with integral towel bar, all welded construction with type 304 stainless steel, satin finish. Minimum towel bar length is 610 mm (2'-0"). Flanges and support arms shall be 0.8 mm (1/32") and equipped with concealed, 1.6 mm (1/16") mounting brackets that are secured to concealed 1.6 mm (1/16") wall plates with locking setscrews. Shelf and towel bar shall be 8 mm (5/16") square tubing. Locate on the wall behind and over the watercloset.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- b. Towel Bar: Provide one towel bar, all welded construction with type 304 stainless steel, satin finish. Minimum towel bar length is 610 mm (2'-0"). Support posts and flanges shall be one-piece, chrome-plated, cast heavy brass with satin finish. Towel bar shall not rotate within support posts. Properly install towel bar such that it shall withstand more than 114 kg (250 pounds) of force. Locate on wall opposite the watercloset.
- c. Soap Dishes: Provide two recessed heavy duty stainless steel soap dishes constructed of 18-8 type 304 stainless steel with a satin finish. Soap dish and flange shall be drawn and beveled, one-piece seamless construction. Locate in walls on both sides of the bath area sink.
- d. Toilet Paper Dispenser: Provide one double roll stainless steel toilet paper holder, constructed of type 304 stainless steel with satin finish. Unit shall accommodate two standard-core toilet paper rolls up to 140 mm (5 1/2") diameter (1800 sheets). Flanges shall be equipped with concealed 1.6 mm (1/16") mounting brackets that are secured to concealed 1.6 mm (1/16") wall plates with stainless steel locking setscrews. Spindles shall be equipped with a heavy duty internal spring. Locate next to the water closet.
- e. Robe Hooks: Provide two surface mounted double robe hooks constructed of heavy duty cast zamak with bright polished chrome-plated finish. Unit shall be secured to a concealed wall plate with a setscrew. Locate on wall behind bathroom door. Provide one additional robe hook installed on each closet room door.
- f. Medicine Cabinets: Provide two recessed stainless steel medicine cabinets. Cabinet shall be type 304 stainless steel with all-welded construction. Exposed surfaces shall have satin finish. Mirror shall be #1 quality, 6 mm (1/4") thick, select float glass guaranteed against silver spoilage for 15 years, and mounted in a door. Door shall be secured to cabinet with full-length stainless steel piano-hinge, retained by means of a magnetic catch, and equipped with a stainless steel cable door-swing limiter. Cabinet shall have four adjustable stainless steel shelves. An integral toothbrush holder shall accommodate 2 toothbrushes, and be located on the back of the door. Unit shall be invertible for choice of right or left-hand door swing. Locate both medicine cabinets in the wall behind and above the bath area sink.
- g. Retractable Clothesline: Provide one surface mounted retractable clothesline constructed of type 304 stainless steel with bright polished finish. Unit shall have a button retainer and 2440 mm (8'-0") nylon cord that retracts on a spring-actuated reel. Locate in shower/ tub enclosure.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- h. Shower Curtain Hooks: Provide twelve snap open hooks. Each hook shall be 1.6 mm (1/16") diameter, type 304 stainless steel. Hooks shall be usable with 32 mm (1 1/4") diameter shower curtain rods.
- i. Shower Curtain: Provide one opaque, matte, 100% vinyl, 1780 mm wide x 1830 mm (5'10" x 6'-0") high shower curtain. Nickel plated brass grommets along the top, 150 mm (6") on center. Bottom and sides hemmed.
- j. Shower Rod: Provide one extra heavy duty, minimum 32 mm (1 1/4") outside diameter, type 304, 1.6 mm (1/16") gauge stainless steel with satin finish. Flanges shall be type 304, 1.6 mm (1/16") gauge stainless steel with satin finish, one-piece die-formed.
- k. Full length Mirrors: Provide one wall mounted mirror in the passage space accessing the sleeping rooms from the serving area. Mirror shall be #1 quality, 6 mm (1/4") thick, select float glass guaranteed against silver spoilage for 15 years, and mounted in a stainless steel frame. Mirror shall be a minimum of 300 mm (1') wide and 1700 mm (5'-8") high.

5.15.4.2 Each unisex toilet room in the lobby area shall have:

- a. Combination Paper Towel Dispenser/Waste Receptacle: Recessed paper towel dispenser and waste receptacle shall be type 304 stainless steel with all-welded construction; exposed surfaces shall have a satin finish. Door shall be 1.6 mm (1/16") gauge; have 13 mm (1/2") 90 degree return edges; be secured to the cabinet with a concealed full length stainless steel piano hinge; and equipped with a stainless steel cable door-swing limiter and two tumbler locks keyed like other washroom accessories. Paper towel dispenser shall be equipped with a six-position adapter, adjustable to dispense 600 C-fold, 800 multi-fold, or 1100 single-fold paper towels. Waste receptacle shall be furnished with a removable, leak-proof, rigid molded plastic waste-container with a minimum capacity of 45 liters (12 gal).
- b. Soap Dish: Provide one recessed heavy duty stainless steel soap dish constructed of 18-8 type 304 stainless steel with a satin finish. Soap dish and flange shall be drawn and beveled, one-piece seamless construction.
- c. Two-Roll Toilet Paper Dispenser: Provide one double roll stainless steel toilet paper holder, constructed of type 304 stainless steel with satin finish. Unit shall accommodate two standard-core toilet paper rolls up to 140 mm (5 1/2") diameter (1800 sheets). Flanges shall be equipped with concealed 1.6 mm (1/16") mounting brackets that are secured to concealed 1.6 mm (1/16") wall plates with stainless steel locking setscrews. Spindles shall be equipped with a heavy duty internal spring.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- d. Electric Hand Dryer: Surface mount, reflective infrared sensor operation, brushed stainless steel cover, 7300 linear feet per minute flow rate, corrosion-resistant plating on internal parts, stainless steel tamper-resistant air intake grills. Dynamically balanced blower wheels for vibration-free running. 10 year limited parts warranty, 5 year sensor warranty.
- e. Grab Bars: Ground floor toilet room only- ADA compliant, type 304 stainless steel grab bars, 1.6 mm (1/16") wall thickness and 40 mm (1 1/2") outside diameter. Clearance between the grab bar and the wall shall be 40 mm (1 1/2"). Concealed mounting flanges shall be 3 mm (1/8") thick stainless steel plate, 80 mm (3") diameter, and equipped with two screw holes for attachment to wall. Flange covers shall be 0.8 mm (1/32"), 85 mm diameter x 13 mm deep (3 3/8" x 1/2"), and shall snap over the mounting flange to conceal the mounting screws. Ends of grab bar shall pass through concealed mounting flanges and be heliarc welded to form one structural unit. Satin finish with peened gripping surface.

5.15.5 Furnishings:

- 5.15.5.1 The Government will provide and install microwaves. Contractor must provide a shelf, of appropriate size for the specified model, in the serving area of all sleeping modules. The Contractor shall coordinate with the government supplied, government installed equipment, and provide the necessary electrical connection points.
- 5.15.5.2 The Government will provide and install a refrigerator in the serving area of all sleeping modules. The Contractor shall coordinate with the government supplied, government installed equipment and provide the necessary space and electrical connection points.
- 5.15.5.3 The Contractor shall provide shelving in the closet spaces of sleeping modules. This shelving shall consist of a 400 mm (1'-4") deep plastic coated wire shelf and continuous heavy duty steel rod installed along one short wall and the long wall of the closets. Shelving and shelving support systems shall be designed to resist a minimum of 100 pounds per linear foot.
- 5.15.5.4 Furniture, appliances and vending machines throughout the facility will be provided and installed by the Government. The Contractor shall coordinate electrical and utility connections for all appliances, vending machines and furniture. Appliances which are built-in (cooktops, range hoods, etc) shall be provided and installed by the Contractor.
- 5.15.5.5 The Contractor shall provide and install plastic laminate work surfaces where they are indicated on the plans and/or in the Room-by-Room descriptions, including the CQ desks at each floor. CQ desks shall consist of a 300 mm (12") transaction top at 1100 mm (3'-8") above finished floor (AFF), with a 600 mm (2'-0") deep work surface at 775 mm (2'-6") AFF.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

- 5.15.6 Fire Extinguishers and Cabinets: Provide fire extinguishers as required by code. All extinguishers shall be contained in a recessed fire extinguisher cabinet, fire rated as required by surrounding construction. Fire extinguisher cabinets shall require breaking a tempered safety glass panel within a keyed, steel cam locking metal door frame to access the extinguisher. Lock and cabinet shall be tamper resistant. Cabinet door and frame shall be constructed of stainless steel. Provide multi-purpose dry chemical extinguishers of the 2-A, 10-B, C rating at locations shown on the Life Safety Plan, as required by code and mounted adjacent to all exits from a floor and the building. In mechanical / electrical / communication / laundry rooms provide multi-purpose dry chemical extinguishers mounted adjacent to exits from the rooms of the 2-A, 10-B, C rating.
- 5.15.7 Expansion Joints: Provide expansion joints between each barracks wing and the common areas at the knuckle. Expansion joints shall be provided in all surfaces of the joint, including floor expansion joint cover assemblies, wall/ceiling expansion joint cover assemblies, exterior expansion joint seals, roof expansion joint assemblies, and fire barrier systems. Floor expansion joints shall be flush with adjacent flooring, and recessed to receive VCT. Standard floor covers shall be designed to withstand a minimum load of 500 lbs. without damage or permanent deformation. Provide expansion joint cover assemblies identical to those of assemblies whose fire resistance and cycling capability has been determined per UL 2079 by Underwriter Laboratories, Inc. Fire rating not less than the rating of adjacent construction. Obtain expansion joint cover assemblies from one source from a single manufacturer.
- 5.15.8 Pavilions: Provide pavilion structures as shown on the drawings. Match building construction with all finishes, including roof and painted steel. Match construction of existing pavilions.
- 5.15.9 Access Doors: Provide vandal resistant metal access doors within masonry construction to maintain access to plumbing, shut-off valves, etc. Locate plumbing so as to limit location and number of required access doors. All doors shall be accessible with keyed locks and vandal resistant fasteners.

SECTION 6.0 - STRUCTURAL DESIGN

- 6.1 **Description:** The structural criteria established herein shall be used for structural loading, design and installation of all structural systems and foundations, including manufacturing, erection, supervision, testing and quality assurance of the completed installation of this project. All structural calculations shall be checked and initialed by a professional engineer registered in the State of New York. The structural work consists of design and construction of, but not necessarily limited to, the following items:
- 6.1.1 Building foundations and slabs-on-grade
 - 6.1.2 Load bearing and non-load bearing masonry walls
 - 6.1.3 Structural precast prestressed hollow core plank
 - 6.1.4 Structural steel framing
 - 6.1.5 Cast-in-place concrete slabs
 - 6.1.6 Horizontal framing members and truss framing members, including roof framing members
 - 6.1.7 Connection details of structural members
 - 6.1.8 Non-load bearing, steel stud walls, soffit or fascia framing
 - 6.1.9 Special conditions, such as expansion, construction and contraction joints
 - 6.1.10 Attachment provisions for architectural, mechanical and electrical elements
 - 6.1.11 Interior and exterior equipment pads
- 6.2 **Metriation:** The metric units used are the International System of Units (SI) adopted by the U.S. Government. New construction and products which are manufactured to metric dimensions or have an industry recognized metric designation are given in hard metric SI values. In other cases both metric SI value units and English inch-pound (I-P) measurement are indicated by an SI value followed by the I-P value in parentheses. The SI value is a mathematical approximation of the I-P value and the I-P value shall govern over the metric measurement. All dimensions on the plans, details and sections shall be in SI format --millimeters (feet-inches).
- 6.2.1 **Dimensions:**
 - 6.2.1.1 **Plan and Vertical Dimensions:** Use exact conversion from English rounded to nearest millimeter.
 - 6.2.1.2 **Design Dimensions:** Use the following Table M1 for conversion from English to Metric.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

- 6.2.2 Masonry: Concrete masonry units manufactured to metric standards are not available in the geographic region of this project, therefore I-P designations shall be used in this document and the contract documents of the project (e.g. 8" x 8" x 16" and etc.).
- 6.2.2.1 Masonry Sizes as They Relate to Overall Plan Dimension: Use the industry standard for block sized, e.g. 8" – 200 mm, 16" – 400 mm, and etc.
- 6.2.3 Structural Steel: Due to the unavailability of metric structural steel shapes in the geographic region of this project, structural steel designations in the SI system format shall be the soft metric conversion of the English equivalents for the structural contract documents of this project.
- 6.2.3.1 Wide Flanges, Channels, Angles and Etc.: Use the Metric size as found in the metric AISC manuals (e.g. W310 x 24 for W12 x 16, W410 x 46 for W16 x 31, etc.).
- 6.2.3.2 Joists, Joist Girders and Etc.: Use the same size designation in Metric as in the English version (e.g. 12K4, 16K1 and etc.).
- 6.2.4 Concrete Reinforcement: Due to the unavailability of metric reinforcing bars in the geographic region of this project, concrete reinforcing designations in the SI system format (soft metric conversion of standard bar sizes) shall be used for the structural contract documents of this project (e.g. #10, #13, #16 for #3, #4, #5 etc.).
- 6.2.4.1 For reinforcing lengths, use Table M1 for conversions from English to Metric.
- 6.2.5 Light Gage Metal and Wire: Use the same gage designation in Metric as in the English version (e.g. 16 gage, 22 gage and etc.).
- 6.2.6 Plates: Any material.
- 6.2.6.1 Thickness: Use exact conversion from English rounded to nearest 1/10th of a millimeter.
- 6.2.6.2 Foot Print Size: Use the following Table M1 of conversions from English to Metric.
- 6.2.7 Bolts
- 6.2.7.1 Diameter: Use exact conversion from English rounded to nearest 1/10th of a millimeter.
- 6.2.7.2 Length: Use the following Table M1 for conversions from English to Metric.
- 6.2.8 Studs: Use exact conversion from English rounded to nearest 1/10th of a millimeter.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

6.2.9 Table M1:

IP Measurements Converted to SI (mm) Measurements

	0'-	1'-	2'-	3'-	4'-	5'-	6'-	7'-	8'-	9'-	10'-
0"	-	305	610	914	1219	1524	1829	2134	2438	2743	3048
1"	25	330	635	940	1245	1549	1854	2159	2464	2769	
2"	51	356	660	965	1270	1575	1880	2184	2489	2794	
3"	76	381	686	991	1295	1600	1905	2210	2515	2819	
4"	102	406	711	1016	1321	1626	1930	2235	2540	2845	
5"	127	432	737	1041	1346	1651	1956	2261	2565	2870	
6"	152	457	762	1067	1372	1676	1981	2286	2591	2896	
7"	178	483	787	1092	1397	1702	2007	2311	2616	2921	
8"	203	508	813	1118	1422	1727	2032	2337	2642	2946	
9"	229	553	838	1143	1448	1753	2057	2362	2667	2942	
10"	254	559	864	1168	1473	1778	2083	2388	2692	2997	
11"	279	584	889	1194	1499	1803	2108	2413	2718	3023	

1/16" = 1.6 mm; 1/8" = 3.2 mm; 3/16" = 4.8 mm; 1/4" = 6.4 mm; 5/16" = 7.9 mm;
3/8" = 9.5 mm; 7/16" = 11.1 mm; 1/2" = 12.7 mm; 9/16" = 14.3 mm;
5/8" = 15.9 mm; 3/4" = 19.1 mm; 7/8" = 22.2 mm.

6.3 **Reference:** Design methods and allowable stresses or load factors for the various structural steel materials shall be in accordance with current engineering and technical manual, codes and specifications (AISC, ACI and etc.), engineering regulations and engineering technical letters. Recommendations made in the codes, specifications and industry standards in this paragraph are requirements of this RFP, unless specified otherwise herein.

6.3.1 Technical Manuals and Instructions, latest editions:

- 6.3.1.1 SEI/ASCE 7-02: Load Assumptions for Buildings
- 6.3.1.2 UFC 3-310-01: Load Assumptions for Buildings
- 6.3.1.3 TI 809-02: Structural Design Criteria for Buildings
- 6.3.1.4 FEMA 204: Seismic Design for Buildings
- 6.3.1.5 TI 809-07: Design of Cold Formed Load Bearing Steel Systems and Masonry Veneer/Steel Stud Walls
- 6.3.1.6 TM 5-809-06: Masonry Design for Buildings

6.3.2 Codes and Specifications:

- 6.3.2.1 AISC – Load and Resistance Factor Design Specification for Structural Steel Buildings by the American Institute of Steel Construction (AISC, Third Edition)

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 6.3.2.2 AISC – Load and Resistance Factor Design Specification, Volume II – Connections by the American Institute of Steel Construction (AISC, Third Edition)
- 6.3.2.3 Building Code Requirements for Structural Concrete by the American Concrete Institute (ACI 318-02)
- 6.3.2.4 SEI/ASCE 7-02 – Minimum Design Loads for Building and Other Structures by the American Society of Civil Engineers
- 6.3.2.5 AISI SG02-2 – North American Specification for the Design of Cold-Formed Steel Structural Members by the American Iron and Steel Institute (AISI/COS/NASPEC 2001)
- 6.3.2.6 Welding Handbook by the American Welding Society (AWS D1.1-2001)

6.4 Design Loads:

- 6.4.1 General: Design loads shall be included in the structural notes on the contract drawings.
- 6.4.2 Dead Loads: The structural system shall be designed and constructed to safely support all dead loads, permanent or temporary, including but not limited to self weight, partitions, insulation, ceilings, floor covering, and all equipment that is fixed in position. All loads and load case combinations shall be in accordance with SEI/ASCE 7-02. Load factors for designs shall be based on the applicable material design standard (e.g., Ref. ACI-318 for concrete, and AISC for structural steel and etc.).
- 6.4.3 Live Loads:
 - 6.4.3.1 Roofs shall be designed to support live loads in accordance with SEI/ASCE 7-02. Minimum Roof Live Load = .960 kPa (20 psf). Reduction of roof live loads will not be permitted.
 - 6.4.3.2 Structural floors shall be designed to support the following live loads with due consideration for the loads due to equipment, cabinets, etc., as noted in the room-by-room description of Section 01010, “Architectural” of this RFP.
 - a. Mechanical Room - 5.982 kPa (125 psf) or actual weight of equipment, whichever is greater
 - b. All other areas - in accordance with SEI/ASCE 7-02.

Note: Floor loads may be reduced as permitted by the SEI/ASCE 7-02.
 - 6.4.3.3 Horizontal Loads: The structural system shall be designed to meet the blast resistance requirements of UFC 4-010-01, DoD Minimum Antiterrorism Standards for Buildings.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

6.4.4 Environmental Loads:

- 6.4.4.1 The structural system (i.e. roof, walls, floors, foundations, etc.) shall be designed to support and resist the following environmental loads in accordance with SEI/ASCE 7-02:
- a. Snow Load including Drifting Snow, Sliding Snow and Rain on Snow: Ground snow load = 3.350 kPa (70 psf). Snow loads, full or unbalanced, shall govern where such loading will result in larger members at connections.
 - b. Wind Load including Cladding and Components: Basic Wind Speed = 161 km/h (100 mph).
 - c. Earthquake Load (also in accordance with FEMA 204):
 - i. Seismic Use Group I
 - ii. Site Classification B (Rock)
 - iii. Seismic Acceleration: $S_1 = 0.099$
 $S_s = 0.326$

6.5 General Design Criteria:

- 6.5.1 The design drawings shall contain structural notes which shall contain a list of the design loading criteria, a list of the strengths of the engineering materials used, the design soil values, and any other data that would be pertinent to remodeling and/or future additions. Reference COE Standard Drawing for required minimum standard structural notes and typical details. The minimum requirements for the respective notes are described in detail throughout this RFP section.
- 6.5.2 Walls mostly below grade that are supported laterally by diaphragms at or near the top and bottom, shall be designed using loadings based on at-rest soil pressures.
- 6.5.3 Diaphragms shall have continuous chord members on all edges and shall have direct positive connection for transferring load to all members of the main lateral force resisting system.
- 6.5.4 Gypsum wallboard shall not be used as a lateral resisting element of the lateral support system.

6.6 Design Criteria:

6.6.1 Serviceability:

- 6.6.1.1 Foundation Settlement Strength: An adequate level of protection against structural failure due to uniform and/or differential foundation settlement of general shear shall be provided.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 6.6.1.2 Vertical Deflection of Suspended Horizontal Framing Members: Building serviceability shall not be impaired by vertical deflections. Vertical deflections shall be limited to the following criteria:
 - a. L/360 at roofs – live loads.
 - b. L/600 for masonry walls and lintels.
 - c. L/360 at floor live loads and L/240 at floor total loads.
- 6.6.1.3 Horizontal Deflection (Drift): Horizontal drift shall not exceed the limits set forth in AFM 88-3, Chapter 13 when the structure is subjected to the required seismic or wind loads. Horizontal drift shall not exceed 0.0025 times the story height when the structure is subjected to wind loads.
- 6.6.1.4 Ultimate Strength of Structural Elements: Provide an adequate level of protection against structural failure under extreme loading conditions for normal factors of safety.
- 6.6.2 Construction Tolerance: Allowable variations from level, or specific slopes, shall be as follows:
 - 6.6.2.1 For overall length, for surface of 3,048 mm (10 feet) or less, plus or minus 3 mm (1/8 inch)
 - 6.6.2.2 Up to 6,096 mm (20 feet) plus or minus 6 mm (1/4 inch)
 - 6.6.2.3 Up to 12,192 mm (40 feet) plus or minus 10 mm (3/8 inch)
 - 6.6.2.4 Determining flatness and levelness of the floor slab surfaces on grade and on deck shall be measured by the straightedge system in accordance with ACI 117/117R (1990).
- 6.6.3 Durability – Time Reliability:
 - 6.6.3.1 Structural components shall be protected from condensed moisture that could impair their structural adequacy through deterioration.
 - 6.6.3.2 Special attention shall be given to protection from corrosion or oxidation of metals, decay of wood and wood base materials, spalling of concrete, leaching of mortar, and deterioration of adhesives. Prevention of these hazards shall be especially important.
 - 6.6.3.3 The materials used in structural elements, components and assemblies shall be resistant to or protected from damage by exposure to normal climatic conditions.
- 6.6.4 Concrete Design:
 - 6.6.4.1 Testing: Testing of concrete work shall be done at the Contractor's expense by an approved independent testing laboratory and be of the frequency as stated in the guide specifications.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 6.6.4.2 Forms: Materials for forms shall be plywood, metal, metal-framed, aluminum, reinforced fiberglass, or plywood-faced, to provide continuous, straight, smooth, exposed surfaces.
- 6.6.4.3 Reinforcing Materials: Reinforcing bars shall meet the minimum requirements of ASTM A 615, minimum Grade 60, deformed. Ties and stirrups can be ASTM A 615, minimum Grade 40 deformed.
- 6.6.4.4 Concrete Materials:
- a. Cement: ASTM C 150, Type I-II Portland Cement low alkali (0.6% or less)
 - b. Fine Aggregate: ASTM C 33
 - c. Coarse Aggregate: ASTM C 33
 - d. Air-Entraining Admixture: ASTM C 260
 - e. Flowing Concrete Admixture: ASTM C 1017, Type 1 or 2
 - f. Calcium Chloride will not be permitted
 - g. Fly Ash: ASTM C 618, Class "F"; fly ash content shall not be less than 20 percent nor more than 25 percent of cement content per cubic yard of concrete.
- 6.6.4.5 Capillary Water Barrier: Provide 150 mm (6-inch) capillary water barrier under all interior floor slabs.
- 6.6.4.6 Curing: Concrete curing shall be as specified in the furnished guide specifications.
- 6.6.4.7 Ready-Mix Concrete: ASTM C 94; 4,500 psi minimum compressive strength at 28 days.

6.7 Foundation Design:

- 6.7.1 General: Foundation notes shall be included in the structural drawings.
- 6.7.2 Minimum Footing Depth: The minimum footing depth from top of footing to outside finish grade shall be 1,524 mm (60 inches).
- 6.7.3 Type of Foundation: The foundation system shall be cast-in-place concrete continuous footings and foundation walls, with floor slabs-on-grade. Use of concrete block for foundation walls is not permitted. Finish on foundation walls shall be Class C. Foundations bearing directly on bedrock shall be doweled or socketed into the bedrock as required to resist lateral design pressures.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 6.7.4 Design Loads: The allowable bearing pressure and pertinent soil properties shall be as given in the final Foundation Design Analysis. Allowable foundation bearing pressures shall be given as “net” values.
- 6.7.5 Slabs-on-Grade: Floor slabs-on-grade shall be a minimum of 127 mm (5 inches) thick. A 152 mm (6 inch) thick capillary water barrier and 6 mil vapor barrier shall be placed under all building interior slabs-on-grade. Slabs shall receive a troweled finish. Provide reinforced thickened slab under all interior non-load bearing CMU partitions as required by structural design analysis.
- 6.7.6 Slab-on-Grade Control Joints: Slab-on-grade control joints shall be located at a spacing no greater than 6,096 mm (20 feet) on center each direction. The joints can be either contraction joints (weakened plane joints) or construction joints.
- 6.7.7 Interior and Exterior Mechanical/Electrical Equipment Foundation Pads: Interior and exterior mechanical and electrical equipment pads are required and shall be shown on the contract drawings. Equipment foundation pads shall be designed to adequately support the equipment loads. Interior pads shall be a minimum 100 mm (4”) thick; exterior pads shall be a minimum 150 mm (6”) thick.
- 6.7.8 Radon Prevention: In accordance with TI-810-91, provide passive radon prevention measures as required for a facility of Priority 2, negligible radon levels. These required measures shall include a 6 mil polyethylene sheet and a capillary water barrier under the floor slab, sealant in all joints in the floor slab and around all pipe and conduit penetrations. Lap plastic sheeting a minimum of 300 mm (12”), and seal with adhesives or pressure sensitive tape. Select and install joint sealants in accordance with TM-5-805-6.
- 6.8 **Superstructure System:**
- 6.8.1 Barracks Wings (Living Modules): The overall structural system for the barracks wings shall be load bearing masonry walls with cast-in-place concrete floor slabs or structural precast hollow core concrete plank with 50 mm (2”) concrete topping. The system shall provide vertical and lateral load carrying capacity and shall provide durability, maintainability and cost effectiveness.
- 6.8.1.1 General: The structural system shall be designed for both the vertical and horizontal loads required by the building code and SEI/ASCE 7-02.
- 6.8.1.2 Cast-in-place concrete shall be designed in accordance with ACI 318-02.
- 6.8.1.3 Precast Plank shall be designed in accordance with PCI MNL-120 “PCI Design Handbook – Precast and Prestressed Concrete”. Provide 50 mm (2”) concrete topping over all plank.
- 6.8.1.4 The framing system shall be able to carry lateral loads imposed on the system by wind or seismic forces.
- 6.8.1.5 Roof framing shall be designed using light gauge metal framing trusses or wood trusses.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

6.8.1.6 Metal deck used as forms for concrete slabs cannot be left exposed in finished spaces.

6.8.2 Commons Area (Center Core): The structural system for the commons area shall be a combination of structural steel frame (columns and beams) and load bearing masonry walls, open web steel joists with concrete floor slabs on metal deck, or precast plank. Where appropriate, exterior and interior walls may be used as load bearing walls. This three-story portion of the building must be designed with sufficient continuity, redundancy or energy dissipating capacity to avoid progressive collapse as defined in Section B-2.1 of UFC 4-010-01 (July 2002).

6.8.2.1 General: The structural system shall be designed for both the vertical and horizontal loads required by the building code and SEI/ASCE 7-02.

6.8.2.2 The framing system shall be able to carry lateral loads imposed on the system by wind forces, seismic forces, and blast impact forces.

6.8.2.3 Exterior wall system shall be reinforced 200 mm (8") CMU back-up with face brick veneer cavity wall. CMU back-up shall be moderately reinforced (minimum 0.15% reinforcing ratio or # 4's @ 400 mm (1'-4")) spacing to resist lateral blast impact forces (reflected pressure of 27.56 kPa (4 psi) and reflected impulse of 261 kPa-ms (38 psi-ms)).

6.8.2.4 Roof framing shall be designed using structural steel members and/or wood roof trusses.

6.8.2.5 Expansion joints shall be provided between the commons area and the two wings.

6.9 Walls and Partitions:

6.9.1 Lateral Loads: Exterior walls shall be designed to withstand lateral loads due to wind, seismic and/or explosive blast while spanning vertically from floor to roof or horizontally between columns, pilasters or intersecting walls. The wall component design wind load shall be determined from the worst possible combination of exterior and interior pressures (either inward or outward) and other provisions of SEI/ASCE 7-02. Seismic loads for structural and architectural components shall conform to FEMA 204. Exterior walls shall be designed to resist a blast reflected pressure of 27.56 kPa (4 psi) and a reflected impulse of 261 kPa-ms (38 psi-ms). Interior partitions shall be designed to withstand minimum lateral pressures as specified in SEI/ASCE 7-02 and can span either vertically or horizontally. If spanned vertically, partitions must be supported at the top of the wall by the roof or floor structural components.

6.9.2 Load Bearing and Non-Load Bearing Masonry Walls:

6.9.2.1 Masonry walls and partitions shall be designed in accordance with TM 5-809-06, as applicable.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 6.9.2.2 Specify and design for Type “S” mortar. The mortar shall contain the manufacturer’s recommended amount of liquid polymeric integral water repellent mortar admixture for water repellency and assure proper bond strength. Masonry mortar shall not be used.
- 6.9.2.3 For design of the masonry unit prism strength use $F'm = 10.342 \text{ MPa}$ (1,500 psi).
- 6.9.2.4 Masonry units shall have a minimum 28 day compressive strength of 13 Mpa (1,900 psi) on net area.
- 6.9.2.5 All exterior above grade masonry units shall be integral water repellent type. Integral water repellent shall be a liquid polymeric admixture. Masonry units which will be exposed to weathering shall be tested for efflorescence. Efflorescence sampling and testing shall conform to the applicable provisions of ASTM C 67.
- 6.9.2.6 Minimum Reinforcement: All masonry walls shall be reinforced as specified in TI 5-809-06 and as required to meet the most severe loading imposed by seismic forces, wind forces or explosive blast. Vertical and horizontal reinforcement requirements for masonry walls shall be clearly indicated on the structural drawings. CMU back-up at exterior walls shall be moderately reinforced (0.15%), fully grouted with #4's at 400 mm (1'-4") c.c. minimum.
- 6.9.2.7 Masonry single wythe interior partitions and walls shall be of thicknesses shown on the drawings and shall be reinforced.
- 6.9.2.8 Wall control joint locations and spacing and other crack control measures shall be in accordance with TI 5-809-06, as applicable, but not to exceed a spacing of 12,192 mm (40 feet) on center and at least 610 mm (24 inches) from the edge of any wall opening.
- 6.9.2.9 Masonry walls shall be kept clear of steel columns and steel beams at a minimum of 19 mm (3/4 inch).
- 6.9.2.10 Masonry notes and standard details shall be placed on the contract drawings.

SECTION 7.0 - FIRE PROTECTION AND SECURITY DESIGN

7.1 Code Review and Applicable Codes/Regulations:

7.1.1 Commercial Codes and Design Manuals: Design and installation shall conform to the latest editions of the referenced listed below, unless otherwise indicated herein.

7.1.1.1 NFPA (National Fire Protection Association) 10 - Portable Fire Extinguishers, latest edition

7.1.1.2 NFPA (National Fire Protection Association) 13 - Standard for the Installation of Sprinkler Systems, latest edition

7.1.1.3 NFPA (National Fire Protection Association) 13R - Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height, latest edition

7.1.1.4 NFPA (National Fire Protection Association) 14 - Standard for the Installation of Standpipe, Private Hydrant, and Hose Systems, latest edition

7.1.1.5 NFPA (National Fire Protection Association) 24 – Standard for the Installation of Private Fire Service Mains and Their Appurtenances, latest edition

7.1.1.6 NFPA (National Fire Protection Association) 70 - National Electrical Code, latest edition

7.1.1.7 NFPA (National Fire Protection Association) 72 - National Fire Alarm Code, latest edition

7.1.1.8 NFPA (National Fire Protection Association) 90A - Installation of Air-Conditioning and Ventilating Systems, latest edition

7.1.1.9 NFPA (National Fire Protection Association) 90B - Installation of Warm Air Heating and Air-Conditioning Systems, latest edition

7.1.1.10 NFPA (National Fire Protection Association) 101 - Life Safety Code, latest edition

7.1.1.11 NFPA (National Fire Protection Association) 291 - Recommended Practice for Fire Flow Testing and Marking of Hydrants, latest edition

7.1.1.12 28 CFR Part 36 - ADA Standards for Accessible Design

7.1.2 Military Regulations and Design Manuals: Design and installation shall conform to the latest editions of the references listed below, unless otherwise indicated herein.

7.1.2.1 TI 800-01, 1998 - Design Criteria

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 7.1.2.2 TI 800-03, 1998 - Technical Requirements for Design Build
- 7.1.2.3 TI 801-01, 1998 - Barracks Upgrade Program
- 7.1.2.4 TI 802-01 - Technical Instructions for Code 3 Design with Parametric Estimating, latest edition
- 7.1.2.5 TI 809-04 - Technical Instructions for the Seismic Design for Buildings, latest edition
- 7.1.2.6 NANP-1110-1-1, 1990 - Manual of Standard Procedures for Planning and Design
- 7.1.2.7 ETL 1110-3-491, 2001 - Sustainable Design for Military Facilities
- 7.1.2.8 UFC 1-200-01, 2002 – Design: General Building Requirements
- 7.1.2.9 UFC 3-600-01, 2003 – Design: Fire Protection Engineering for Facilities
- 7.1.2.10 UFC 4-721-11.1, 2001 - Unaccompanied Enlisted Personnel Housing (UEPH) Complexes, Volume I: Project Management Manual
- 7.1.2.11 UFC 4-7210-11.1, 2001 - Unaccompanied Enlisted Personnel Housing (UEPH) Complexes, Volume II: Model Request for Proposals
- 7.1.2.12 Memorandum for Headquarters, Installation Management Agency, dated May 2003 – Revised Barracks Construction Criteria

7.2 Design Standards and Analysis:

- 7.2.1 General: All materials, equipment, fixtures and appurtenances shall be labeled by Underwriters Laboratories, Inc. or a similar organization acceptable to the government.
- 7.2.2 Sprinkler System: The buildings shall be fully sprinklered with a wet-pipe sprinkler system. The attic space is not required (due to presence of two hour fire rated ceiling) to be and shall not be sprinklered and shall be required to have draft stops [dividing attic space into areas not exceeding 280 m² (3000 ft²)] if wooden roof construction is utilized. The sprinkler system shall be hydraulically designed and installed in accordance with NFPA 13, NFPA 13R, and the other codes referenced above. All sprinkler system piping and components shall be mounted to meet all necessary seismic restraint requirements. Refer to Section 6.0 for seismic classifications. All sprinkler piping shall be black steel schedule 40. The sprinkler system shall consist of the following:
 - 7.2.2.1 The present site is fed from a 3,785,412 Liter (1,000,000 gallon) tank. Water supply pressure and flow information was recently taken (July 15, 2003) on the proposed site and yielded a static pressure of 282 kPa (41 psi) and a residual pressure of 220 kPa (32 psi) flowing 12,654 Lpm (3,343 gpm), respectively. See water flow test results located in Attachment #2.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 7.2.2.2 There shall be no fire pump installed in these buildings. The designer shall hydraulically design the system to the appropriate density requirements as stated in letters a and b in 7.2.2.4 below without the need for a fire pump.
- 7.2.2.3 A minimum of a 203-mm (8 inch) fire service shall be brought into the buildings and the domestic water service shall be branched off of and be supplied by it. Piping shall extend 1.5 meters (5 feet) outside of buildings to civil portion of work. The fire service shall terminate in the first floor mechanical room where it shall be protected by a vertical type double check detector assembly (to save space) designed specifically to be used for fire protection purposes. Both valves on the check valve shall be monitored by tamper switches, which shall in turn be monitored by the building fire alarm system. Any valve drainage requirements shall drain directly to the exterior of the buildings.
- 7.2.2.4 Sprinkler system densities shall be as follows:
- a. Light Hazard: [3.8 Lpm/m² (.10 gpm/ft²) over 139 m² (1500 ft²), with a 379 Lpm (100 gpm) hose stream demand, for a duration of 30 minutes]: This shall include all living modules (**sprinklers in living modules shall be designed per NFPA 13R**), corridors, common areas, means of egress, multipurpose spaces, mail distribution room, storage rooms (only general storage), janitor closets, mud rooms and communications rooms.
 - b. Ordinary Hazard Group 1: [6.11 Lpm/m² (.15 gpm/ft²) over 139 m² (1500 ft²), with a 946 Lpm (250 gpm) hose stream demand, for a duration of 60-90 minutes]: This shall include all laundry, mechanical, and electrical rooms.
- 7.2.2.5 All sprinkler heads shall be of the quick response type. Sprinkler heads located in any Ordinary Hazard Group 1 space shall be of the intermediate temperature rating. Sprinkler heads located in spaces designed per NFPA 13R shall be the residential type.
- 7.2.2.6 All areas of the building (except attic spaces) shall be fully sprinklered. This includes closets and other ancillary spaces.
- 7.2.2.7 All sprinkler system flow and tamper switches shall be fully supervised by the building fire alarm control panel.
- 7.2.2.8 Each wing of each floor of the building shall be considered an individual sprinkler zone. These zones shall be controlled by either OS&Y (Outside Stem and Yoke) or butterfly type valves and shall be monitored by tamper switches, which shall in turn be monitored by the building fire alarm system. Also, on the flow side of the zone valve, a flow switch shall be installed and monitored by the building fire alarm system. Floor control valve assemblies shall be installed per NFPA 13.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 7.2.2.9 There shall be no exposed sprinkler piping in the building except in mechanical and electrical spaces and stairwells. There shall be no sprinkler piping located in the attic space.
- 7.2.2.10 A Class I wet standpipe system shall be located in both end stairwells and the center stairwell of the building and connected to the wet-pipe sprinkler system. There shall be no hoses provided with the standpipe system as it is for fire department use only. All standpipe connections shall be of the male 63.5 mm (2-1/2-inch) NST (National Standard Thread) type. The residual pressures required for standpipe systems as dictated in the codes above are not required to be met for this building because fire department apparatus is expected to augment pressures in the standpipe system. Each standpipe riser in the building shall be provided with a flow switch which shall be monitored by the building fire alarm system.
- 7.2.2.11 A 127 mm (5-inch) Storz type fire department connection shall be provided on the site in accordance with Section 3.
- 7.2.3 Fire Alarm and Detection System: The building shall receive a completely addressable fire detection/alarm system installed in accordance with the codes referenced above. The system shall have a sufficient number of addressable points to accommodate all necessary devices and shall have the capacity for future expansion. Initiating device circuits shall be wired Class A, Style 6 back to the fire alarm control panel and notification device circuits shall be wired Class A, Style Z back to the fire alarm control panel. All fire alarm raceway and components shall be mounted to meet all necessary seismic restraint requirements. Refer to Section 6.0 for seismic classifications. The fire alarm system shall consist of the following:
 - 7.2.3.1 Fire alarm control panel mounted in building main electrical room with an auxiliary annunciator panel capable of all control functions mounted in the building main entrance vestibule. A system smoke detector shall be mounted above the fire alarm control panel.
 - 7.2.3.2 Automatic smoke detection shall be provided in each sleeping room and module serving area. The smoke detectors shall be system detectors with sounder type bases. Upon initiation of a sleeping room or serving area smoke detector, only the sounder bases of the three smoke detectors within the affected living module shall activate and a supervisory signal shall be transmitted to the fire alarm control panel. Upon initiation of a general fire alarm initiation device (manual pull station or sprinkler flow switch) all audio/visual appliances and all smoke detector sounder bases throughout the building shall activate.
 - 7.2.3.3 Detection is not required in the rest of the building as indicated in NFPA 101. Smoke detection shall not be installed in the rest of the building as the building shall be equipped with a fully supervised automatic sprinkler system.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

- 7.2.3.4 The fire alarm system shall monitor all sprinkler/standpipe system flow and tamper switches for alarm, trouble, and supervisory conditions. This includes the exterior post indicator valve tamper switch.
- 7.2.3.5 Manual fire alarm pull stations shall be installed at all means of egress from a floor and the building in immediate proximity to the means of egress. Fire alarm pull stations shall be of aluminum construction. Manual pull stations shall be the addressable type or shall be monitored by an addressable monitor module installed in the pull station back box. All fire alarm pull stations shall be provided with a polycarbonate plastic protection cover with a local alarm (powered by fire alarm control panel) which shall sound at the cover when it is lifted.
- 7.2.3.6 The fire alarm system shall be capable of and constructed to provide all accessory functions as required by code (i.e. fan shutdown, smoke damper closure, fire damper closure).
- 7.2.3.7 Duct smoke detectors shall be installed per NFPA 90A. All fans 472 l/s (1000 cfm) or greater shall be shutdown automatically upon a general fire alarm activation and not restart until the fire alarm system is manually reset.
- 7.2.3.8 Fire alarm audible, visual and audio/visual appliances shall be installed per NFPA 72. Living modules do not require visual notification appliances and shall not be installed.
- 7.2.3.9 The fire alarm system shall be provided with and connected to a Monoco BT2-8 fire alarm transceiver which shall transmit signals to the existing base wide Monoco D700 fire alarm monitoring system. The fire alarm transceiver shall be provided with all necessary equipment to interface with the existing base monitoring system.
- 7.2.3.10 All laundry and mechanical rooms shall be provided with both combustible gas detectors (calibrated to alarm at 25% of the LEL of methane) and carbon monoxide gas detectors (calibrated to alarm at 35 ppm). These detectors shall be monitored for alarm and trouble conditions by the building fire alarm system and shall transmit as separate zones to the fire alarm transceiver. When a detector activates it shall sound a horn/strobe with an amber lens. Signage provided with the horn/strobe shall state what the hazard is and to evacuate the area immediately to fresh air. Activation of any gas detector shall initiate a building general fire alarm, however shall not sound the fire alarm audio/visual appliances or smoke detector bases in the building. Activation of any gas detector in a mechanical room with a boiler or domestic water heater shall shutdown all boilers and domestic water heaters in the space.
- 7.2.3.11 There shall be no exposed fire alarm raceway in the building, except in mechanical and electrical spaces.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

- 7.2.3.12 Pseudo fire alarm zones shall be programmed to send signals to the Monoco fire alarm transceiver to transmit zone information to the base wide fire alarm monitoring center. Also all fire alarm system trouble and sprinkler system valve supervisory conditions shall be sent as separate signals to the Monoco transmitter. Provide all necessary programming and addressable modules to accomplish general zoning of the fire alarm system and wiring/programming of the Monoco transmitter..
- 7.2.3.13 Magnetic door hold open devices shall be installed to hold open the doors leading from the floor entry lobbies to the corridors leading to the wings on each floor. Coordinate with door hardware so that there are no conflicts with door hardware hitting walls.
- 7.2.4 Security: There are no requirements for electronic security in this building and none shall be provided.

SECTION 8.0 - MECHANICAL - HVAC DESIGN

8.1 Code Review & Applicable Regulations:

- 8.1.1 Codes and Design Manuals: Design and installation shall conform to the latest editions of the referenced listed below, unless otherwise indicated herein.
- 8.1.1.1 COE (Army Corps of Engineers), Fort Drum Energy Design Guide
 - 8.1.1.2 COE (Army Corps of Engineers), Fort Drum Energy Management Guide
 - 8.1.1.3 COE (Army Corps of Engineers) Cost Engineering Instructions and Regulations
 - 8.1.1.4 Executive Order 13123 - Sustainable Principles
 - 8.1.1.5 SPiRiT - Sustainable Project Rating Tool
 - 8.1.1.6 TI 800-01, Design Criteria
 - 8.1.1.7 TI 800-03, Technical Instructions Technical Requirements for Design-Build
 - 8.1.1.8 TI 809-04, Seismic Design for Buildings
 - 8.1.1.9 ASHRAE (American Society of Heating Refrigeration and Air Conditioning Engineers) Handbook (5 vols., latest issue)
 - 8.1.1.10 ASHRAE (American Society of Heating Refrigeration and Air Conditioning Engineers) Standard 62 – Ventilation for Acceptable Indoor Air Quality
 - 8.1.1.11 ASHRAE (American Society of Heating Refrigeration and Air Conditioning Engineers) Standard 90.1 – Energy Standard for Buildings, IP Edition
 - 8.1.1.12 NFPA (National Fire Protection Association) Standard 54 – National Fuel Gas Code
 - 8.1.1.13 NFPA (National Fire Protection Association) Standard 90A – Installation of Air Conditioning and Ventilation Systems, Latest Edition
 - 8.1.1.14 NFPA (National Fire Protection Association) Standard 90B – Installation of Warm Air Heating and Air Conditioning Systems
 - 8.1.1.15 NFPA (National Fire Protection Association) Standard 96 – Ventilation Control and Fire Protection of Commercial Cooking Operations

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 8.1.1.16 NFPA (National Fire Protection Association) Standard 211 – Standard for Chimneys, Fireplaces, Vents and Solid Fuel Burning Appliances
- 8.1.1.17 UFC (Unified Facilities Criteria) 3-400-01 – Design: Energy Conservation
- 8.1.1.18 UFC (Unified Facilities Criteria) 3-600-01 – Design: Fire Protection Engineering for Facilities
- 8.1.1.19 UFC (Unified Facilities Criteria) 3-410-02A Design: HVAC Systems.
- 8.1.1.20 UFC (Unified Facilities Criteria) 3-410-01FA Design: HVAC.
- 8.1.1.21 UFC (Unified Facilities Criteria) 3-430-05FA Design: Gas Distribution.
- 8.1.1.22 IBC (International Building Code) 2003
- 8.1.1.23 UFC 1-200-01 Design: General Building Requirements
- 8.1.1.24 UFC 4-721-11.1 Design: UEPH Complexes
- 8.1.1.25 UFC 1110-3-483 Clothes Dryer Exhaust Venting
- 8.1.1.26 UFC 4-010-01 Design: DoD Minimum Antiterrorism Standards for Buildings
- 8.1.1.27 ETL 1110-3-491 Sustainable Design for Military Facilities

8.2 General:

- 8.2.1 Materials and Equipment: All materials and equipment shall be new and shall be the standard catalogued product of manufacturers regularly engaged in production of such materials and equipment, and shall be the manufacturers' latest standard design.
 - 8.2.1.1 Equipment shall comply with the requirements of Underwriters Laboratories, Inc. (UL), Canadian Gas Association (CGA), American Gas Association (AGA), Air Conditioning and Refrigeration Institute (ARI), American Society for Testing and Materials (ASTM), National Electric Manufacturers Association (NEMA), American National Standards Institute (ANSI), National Fire Protection Association (NFPA) or other national trade associations as applicable.
 - 8.2.1.2 Equipment selection and layout shall make provisions to observe the manufacturer's recommended clearances and code clearances.
- 8.2.2 All HVAC system supports, foundations, braces, hangers and vibration isolators shall be designed to meet requirements of T1 809-04, Seismic Design for Buildings, except that life safety systems and equipment shall be designed to withstand horizontal forces of 1.0 g, minimum. Refer to Section 6.0 for further requirements.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 8.2.2.1 Vibration and Noise Isolation: All piping, ductwork, air handling units, unit heaters and other equipment shall be properly isolated to prevent vibration, and subsequent noise shall be limited to 10% transmission of the lowest equipment RPM. All piping within fifty feet of rotating equipment shall be vibration isolated with combination steel spring and neoprene hangers or floor mounts with suitable seismic restraints. All rotating equipment shall be vibration isolated with combination steel spring and neoprene hangers or floor mounts with suitable seismic restraints. Isolator deflections shall comply with recommendations in the ASHRAE Applications Handbook, except that life safety systems and equipment shall be designed to withstand forces of 1.0g, minimum.
- 8.2.2.2 Contractor shall provide isolation to meet the RC (N) Mark II ratings listed in paragraph 8.13.4, "Acoustic Requirements," below.
- 8.2.2.3 When piping and support materials are dissimilar metals, an isolation system shall be used to prevent corrosion from electrolysis.
- 8.2.3 Wall mounted thermostats located in spaces served by 2-pipe room fan coil units as well as terminal heat shall be of the limited range, dual action heating and cooling type.

8.3 HVAC Load Calculations: The following requirements shall apply:

- 8.3.1 The heat gain and loss calculations shall be based on the HVAC Design Parameters listed in the Manual.
- 8.3.2 They shall conform with ASHRAE methods for non-residential Heating and Cooling Calculations, as defined in the latest edition of ASHRAE Handbooks.
- 8.3.3 They shall be made on room-by-room basis, using an acceptable software program, such as Trane Trace. The software program shall perform 8760 hourly calculations. Complete input and output summaries shall be submitted during the design process.
- 8.3.4 Heat of lights and other internal heat gains shall not be considered as credits that supplement the capacity of the heating system.
- 8.3.5 Cooling equipment shall be selected to satisfy both the sensible heat, and the latent heat loads as determined by the HVAC Load Calculations.
- 8.3.6 Building Population: Number of Unaccompanied Enlisted Personnel = 92.
- 8.3.7 Energy Usage: The design will follow UFC 3-400-01, Design: Energy Conservation. The design shall also comply with ASHRAE Standard 90.1, if its requirements are more demanding than the Fort Drum Guide.
 - 8.3.7.1 Calculations of the annual energy utilization shall be performed using the latest version of the Trane Company's Trace computerized program or an equivalent that is approved by the Government for the performance of hourly simulation of building's energy performance.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

8.3.7.2 During the design process, the Contractor shall submit all calculations to substantiate the anticipated energy performance of the systems.

8.4 **HVAC Design Parameters:** The design shall be based on the following parameters and as further defined in paragraph titled, "Room-By-Room Requirements" in this Specification Section.

8.4.1 Air-handling units and exhaust fans for bathroom and general exhaust systems shall be located in the second and third floor mechanical rooms.

8.4.2 Boilers: Provide a minimum of (2) two cast iron boilers. Each boiler shall be sized for 60% of the maximum heating load capacity at all times.

8.4.3 Outside and Exhaust air shall enter/exit building air systems through wall louvers (no roof-mounted air intakes or exhaust outlets). Outside air intakes shall be no less than 3 meters (10 feet) above grade.

8.4.4 HVAC controls shall be completely compatible and fully integrated with the existing base-wide Trane Tracer or Siemens Energy Management Control System (EMCS).

8.4.5 TI 809-04, Seismic Design for Buildings (refer to Section 6.0).

8.4.6 Project Location: Fort Drum, New York; Latitude: 44° 02' N; Longitude: 75° 46' W; Elevation: 200 meters (650') above sea level.

8.4.7 Outdoor Design Conditions:

8.4.7.1 Summer: 28.5°C (83°F) DB and 23°C (71°F) WB.

8.4.7.2 Use 32.2°C (90°F) DB OA temperature for air-cooled condensers.

8.4.7.3 Winter: (-) 29°C (-20°F) DB Heating Degree Days: 7601.

8.4.7.4 Prevailing Wind: From Northwest, at 5 knots, in the winter.

8.4.8 Indoor Design Conditions for Living/Sleeping Modules and Adjoining Spaces, Multi-Purpose Rooms, Lobby Area(s) and Mail Distribution Room:

8.4.8.1 Summer: 23.9°C (75°F) DB, with optional nighttime setup at 29.5°C (85°F) DB.

8.4.8.2 Winter: 20°C (68°F) DB, with optional nighttime setback at 12.8°C (55°F).

8.4.9 Indoor Design Conditions for Communications Room: 22.2°C (72°F) DB and 50% RH Day and Night, year round.

8.4.10 Indoor Design Conditions for Attic "Cold Space": Natural ventilation of "cold" attic spaces shall include ridge, gable and soffit areas. Refer to Section 5.14.

8.4.11 Indoor Design Conditions for Storage Areas: 20°C (68°F) DB year round (Winter only).

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

- 8.4.12 Indoor Design Conditions for Mud Room and Laundry Rooms: 20°C (68°F) DB with 12.8°C (55°F) nighttime setback year round (Winter only).
- 8.4.13 Indoor Design Conditions for Mechanical and Electrical Rooms: 12.8°C (55°F) DB with 35°C (95°F) DB high limit (heat and ventilation only).
- 8.4.14 Indoor Design Conditions for Entry Vestibules: 7.5°C (45.5°F) DB (heat only).
- 8.4.15 Heat Gain/Loss through Building Envelope: R-factors as defined by the Architect.
- 8.4.16 Internal Cooling Design Criteria:
 - 8.4.16.1 Equipment: Actual normal heat rejection of installed equipment.
 - 8.4.16.2 Lights: As defined by Electrical Engineer.
- 8.4.17 Ventilation Requirements:
 - 8.4.17.1 Boiler Room: Combustion venting as required by NFPA-54 and NFPA-211.
 - 8.4.17.2 Living/Sleeping Modules: Ventilation systems shall be designed per ASHRAE 62, latest issue.
- 8.4.18 Exhaust Requirements: Refer to Section 11, "Room by room Requirements".

8.5 Selected Design Concepts:

- 8.5.1 HVAC for Living/Sleeping Modules: Each Living/Sleeping Module shall have two dedicated horizontal fan coil units to provide air conditioning and finned tube radiation to provide heating - one system for each sleeping room.
 - 8.5.1.1 Finned tube radiation hot water (glycol) shall be controlled by two-way (heating) control valve. A unit-mounted controller on the fan coil unit shall control both cooling and heating, receiving input from a wall-mounted heating/cooling thermostat located in the sleeping room.
 - 8.5.1.2 Ventilation air to Living/Sleeping spaces and/or spaces requiring exhaust make-up shall be provided by air handling units AHU-1 and AHU-2 complete with pleated (30%) roughing filters and cartridge (85%) final filters, chilled water (glycol) cooling coils, and hot water (glycol) heating coils for filtering and tempering (outside air will be treated to the actual interior space temperature, or as necessary to handle the latent load) of the ventilation air to room design conditions. Each air handling unit shall contain modulating cooling and heating control.
- 8.5.2 2-pipe Fan Coil Units (FCU's) shall be complete with cooling coil (glycol) and a factory-installed piping package complete with two-way modulating cooling control valve, circuit setter, unions, ball valves and strainer. Provide with two-position automatic air damper set to match airflow delivered by ventilation (make-up) air system. Provide discharge air grilles to allow for four-way adjustment of supply air

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

flow into space served. Locate unit as close to closet as possible so piping is not visible. Fan speed shall be controlled by user-operated three speed switch. Refer to Section 11, "Room by Room Requirements".

- 8.5.3 HVAC System for the Communications Room: Spaces on both floors shall utilize self-contained packaged units designed for year-round heat removal by mechanical refrigeration. The self-contained unit shall be suspended within the Communications Room. The matching air-cooled condenser shall be equipped to operate in low ambient temperature conditions. Indoor condensing unit shall utilize a centrifugal fan for ducting condenser air to and from wall louver. The ductless units shall also contain micro-processor controls, factory installed infrared humidifiers and hot-gas bypass reheat for humidity control. Condenser unit shall be provided with drain piping and vibration isolators.
- 8.5.4 Bathroom Exhaust Systems: Each bathroom space shall utilize a ceiling exhaust fan complete with exhaust riser routed to vertical duct chases. Exhaust risers shall connect into horizontal exhaust duct mains located on each side of each wing. The exhaust duct mains shall be routed via the warm duct spaces to one of three general exhaust fans located in the third floor Mechanical Room.
- 8.5.5 Serving Area (General Exhaust) Systems: Exhaust for the serving areas, shall be provided by ceiling exhaust register located in the ceiling of the serving area. The general exhaust air branches shall be routed to duct risers located in the vertical duct chases (same routing as described for the bathroom exhaust branches) to horizontal exhaust duct mains located in the warm air duct spaces.
- 8.5.6 Kitchen Exhaust Systems: Each kitchen space shall utilize an occupant operated hood exhaust / fan complete with exhaust riser routed to vertical duct chases. Exhaust risers with fire dampers at each floor/ceiling penetration shall connect into horizontal exhaust duct mains located on each side of each wing. The exhaust duct mains shall be routed via the warm duct spaces to one of two general exhaust fans located in the third floor Mechanical Room.
- 8.5.7 HVAC System for Knuckle (Lobby) Areas: Ventilation air (tempered makeup air) for Multi-Purpose spaces, Lobbies, Laundries and Mail Distribution space shall be provided by an air handling unit. Size 1st Floor Lobby Area with a 2 times larger load (capacity) for heating to compensate for the infiltration or exfiltration of the doors opening and closing. The following spaces in the "Knuckle" Area will be air conditioned via 2-pipe room fan coil units and heated by hot water (glycol) terminal units:
- 8.5.7.1 Multi-Purpose Room (Ground Floor);
 - 8.5.7.2 Multi-Purpose Room (Second Floor);
 - 8.5.7.3 Mail Distribution Room (Ground Floor);
 - 8.5.7.4 Lobby (Ground Floor);
 - 8.5.7.5 Lobby (Second Floor);
 - 8.5.7.6 Vestibule: Heating shall be provided by hot water convectors.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

- 8.5.8 Corridors: No mechanical cooling required. Heating for the corridor shall be provided by hot water convectors. Ventilation air for the corridors [100 cfm (47 L/s) /Corridor] will be supplied by AHU-1/2 through a ceiling grille [approx. 12 x 12 (305 mm x 305 mm)] to each Corridor close to the Knuckle via a 10 x 8 (250 mm x 200 mm) duct. Corridor ventilation air shall be relieved through a ceiling grille [approx. 12 x 12 (305 mm x 305 mm)] located at the opposite end of the Corridor into 10 x 8 (250 mm x 200 mm) ducts.

The relief air duct (one in each Living / Sleeping Space) shall be routed into a vertical chase and into the warm duct space. At the Third Floor level, each of the two relief air ducts shall be routed from and connected into an insulated plenum in the "warm duct" space and into one of the wall louvers in the Third Floor Mechanical Room. Provide a two-position automatic air damper in each relief air duct at point of connection into insulated wall louver plenum. When AH-1/2 is "On", automatic air damper's shall be open; when AHU-1/2 is "Off", automatic air damper's shall be closed.

- 8.5.9 Equipment Rooms: Refer to Section 11 (room by room requirements).

- 8.6 **HVAC Controls**: The Contractor shall provide the 1st Brigade Barracks with a system of Direct Digital Controls (DDC). The Contractor shall insure that the DDC system completely, seamlessly and directly interfaces with the existing base-wide Trane Tracer Summit Energy Management and Control System (EMCS) installed at Fort Drum. The system shall include software with all the necessary means for scheduling, local and remote control and adjustment, load shedding, event management, monitoring, trending, logging, maintenance notification, and alarms. The Contractor shall install the software in one of the existing PC workstations at Fort Drum, as designated by the Contracting Officer's Representative. The DDC system shall communicate via modem at a minimum of 28,800 bits per second (bps). The Contractor shall connect the modem to a dedicated phone line. HVAC controls shall be in accordance with UFC 3-410-02A Design: HVAC Systems.

- 8.6.1 Direct Digital Controls: Control drawings shall include schematics, ladder diagrams and sequences of operation for all HVAC equipment. The DDC system shall include all application software, devices and materials needed to implement the specified control strategies required. The program nomenclature shall follow the standards in use at Fort Drum. Application software shall be provided for each system as recorded on the EMCS points list. The new system interface shall not alter the existing base central software operations. The system shall be capable of monitoring and override from the central EMCS computer, and shall be designed to be completely stand-alone in the event of communications failure. All wiring shall be labeled and terminated. All control devices shall be new and unused.

- 8.6.2 The Contractor shall fully program the HVAC/EMCS control panel, including graphics and control schemes in the EMCS central computer. The graphics screens shall include a building floor plan indicating control locations and detail screens of individual equipment controls as required in the point's list. The control schemes and graphics shall be approved by submittal. The program shall execute standalone control functions in the building control panel with or without communication with the EMCS central computer. The building control panel shall accept override controls, set-point adjustments, and program central network monitoring and control functions. All alarms generated by the building panel shall automatically be logged with the EMCS Central

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

Computer. A text-based sequence of operation screen shall be linked to the graphics screens for the building and shall explain control procedures. The I/O summary (points list) shall be submitted to Contracting Officer's Representative for approval.

8.6.3 Ventilation System Sequence of Operation:

8.6.3.1 General exhaust and Bathroom exhaust fans shall be interlocked with respective air handling unit so that whenever the control sequence is in the "OCCUPIED" cycle the air handling unit and exhaust fans serving general and bathroom exhaust are operating.

8.6.3.2 Air Handling Units: The outside air damper (AAD) for the air handling unit and AAD at respective exhaust fan shall be in the "OPEN" position whenever the system is in the occupied and "nighttime setback" modes. In the unoccupied mode, the AAD shall be in the "CLOSE" position and the respective exhaust fan is "OFF".

8.6.3.3 Air handling units, exhaust fans ("PULL" fans) and all bathroom exhaust fans ("Push" ceiling fans) shall operate continuously when the system is in the occupied mode. In accordance with Forced Protection Criteria, polycarbonate shielded pull stations with horns, relay contacts and 24VDC remote power shall be provided to globally shut down building air handling equipment. Switches shall be located 1.8m (6'-0") above the finished floor at the closest wall to any CQ Desk.

8.6.3.4 Kitchen central "pull" exhaust fan shall utilize a variable frequency drive and pressure transducer to control ventilation rate. As individual kitchen hood fans are operated, the VFD will adjust central fan RPM's to maintain the proper exhaust rate. To ensure the central exhaust fan can meet minimum flow conditions, a bypass loop will be utilized.

8.6.3.5 Fan coil units shall provide outside air tempered to room design conditions whenever system is in occupied mode. The DDC shall control FCU fan speed based on space temperature. Each FCU will contain a chilled water coil to provide additional conditioning during cooling season.

8.7 **Heating Boilers:** A minimum of (2) two Gas-fired boilers, located in the first floor mechanical room of every building, shall provide heating for each building. Pulse type combustion boilers are not acceptable.

8.7.1 The jacket panels shall be steel construction and coated with a baked-on enamel finish. All waterways shall be of cast-iron construction.

8.7.2 Controls shall be provided to allow for staggered and lead-lag operation and shall be integrated with the building DDC system. Control Panel shall be located for easy access and have a protective cover, which can be removed with no tools. Solid-state controls shall be used to monitor and control all operating and safety functions. Standard operating controls and equipment shall include ignition, operating aquastat, manual reset hi-limit, automatic main and redundant gas valve, master switch with pilot light, low water cutoff switch, inlet/outlet temperature gauges, ASME safety relief valve and flow switch. Boilers shall be equipped for 120 V, single phase, 60 Hertz. Complete factory certified operating and start-up instructions shall be furnished with unit.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 8.7.3 Boilers shall be UL listed.
- 8.7.4 Each boiler shall utilize a separate boiler secondary pumping system to maintain constant hot water circulation rate through the boiler whenever the boiler is enabled. Circulation rate shall be in accordance with manufacturer's recommendations.
- 8.7.5 Unit shall meet or exceed ASHRAE 90.1b-2001.
- 8.7.6 Each boiler shall have a minimum combustion efficiency rating of 80% and designed for operation up to 344.5 kPa (50 psig) pressure.
- 8.7.7 Burners shall be of corrosion-resistant construction. The burner gas train shall be AGA and FM approved. Provide all required boiler safety devices, force draft type boiler gas burners with sidewall power vent exhaust. The boilers shall be equipped with ASME rated pressure relief valves. Boiler combustion safety controls shall utilize LED readout.
- 8.7.8 The selected boilers shall have the smallest footprint possible and shall be mounted on anchored, reinforced 152 mm (6 inches) concrete housekeeping pad with a 100 mm (4 inches) clear space from the boiler to the edge of the pad. All code-mandated and manufacturer's specified maintenance clearances shall be provided in the mechanical room containing the boilers.
- 8.7.9 The boiler room shall be provided with natural gas and carbon monoxide gas leakage monitoring devices. These devices shall be connected to the fire alarm control panel, and shall effect automatic shutdown of gas-fired boilers and domestic hot water heaters, upon detection of natural gas leakage or carbon monoxide.
- 8.7.10 Power venting shall be horizontal type, furnished and installed in strict accordance with manufacturer's installation.
- 8.7.11 Boiler Selection Parameters: The Design Build Contractor shall take all necessary precautions to assure the boiler's satisfactory performance when heating aqueous solution of inhibited propylene glycol that provides freeze protection to -29° C (-20° F). He shall substantiate his selection by submittals, for review, of all data and parameters recommended by the manufacturers of both the boiler and the glycol solution, as well as all the related calculations and a signed certificate of his compliance with the requirements. All of these data shall be specifically relevant to the make and type of the proposed boilers and materials used for their construction, and the physical characteristics appropriate for the proposed propylene glycol heat transfer fluid. As a minimum, the following shall be addressed, clarified and fully documented:
 - 8.7.11.1 Boiler's construction and materials shall be suitable for the heating of propylene glycol.
 - 8.7.11.2 Boiler's output capacity shall be based on the use of propylene glycol solution.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 8.7.11.3 Chemical treatment of make-up water shall be compatible with the glycol and inhibitor system provided by the glycol's manufacturer.
- 8.7.11.4 Glycol manufacturer's data shall define the maximum permissible bulk temperature of the fluid and the maximum permissible temperature of the fluid's surface film that is exposed to the heat of the boiler's fire.
- 8.7.11.5 Boiler manufacturer's data shall include parameters and recommendations for protecting the fluid-and-inhibitor system against accelerated degradation due to the heat in the interior of the boiler. At least the following shall be defined:
 - a. Recommended flow velocity of the fluid through the boiler, to minimize the adherence of the glycol's boundary film on the inside of the boiler.
 - b. Recommendation regarding the use of forced and continuous circulation of the fluid through the boiler, regardless of what is happening in the system while it is in operation.
 - c. Recommended over-pressure shall be maintained on the boiler's gage.
 - d. Provide glycol manufacturer's recommendations of periodic monitoring and analysis of the fluid's condition.

8.8 **Hot/Chilled Glycol Loops:** The hot propylene glycol primary-secondary piping system shall be arranged to circulate in a closed loop that includes the boilers and all the glycol-heated terminal heating devices located throughout the building. The chilled propylene glycol primary-secondary piping system shall be arranged to circulate in a closed loop that includes the fan coil units located throughout the building. Contractor shall provide pumps, air separator, expansion tanks, piping, chemical treatment, glycol fill station and all required hydronic controls and accessories. Heating shall be available whenever the outdoor air temperature is less than 18.5°C (65°F). Cooling shall be available whenever the outdoor air temperature is greater than 21°C (70°F). Glycol concentration shall be sufficient to protect the system against freezing in temperatures down to (-)29°C (-20°F). Hot water supply and return piping 50 mm (2") or less in diameter shall be insulated with 25 mm (1") insulation.

- 8.8.1 There shall be no less than two base-mounted hot glycol pumps, one of which shall be operating and the other on automatic standby. Only one chilled glycol pump is required.
 - 8.8.1.1 Pumps shall be provided with variable speed drives, calibrated balancing valves, check valves, inlet and outlet pressure gages, butterfly valves, strainers, a diaphragm expansion tank and an air separator with automatic fill valve and air purger.
 - 8.8.1.2 The controls shall activate the lead/lag pumps daily and to equalize their running hours.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 8.8.2 Glycol flow through the boilers/chiller shall be continuous whenever the boiler/chiller is enabled.
- 8.8.3 Automatic controls shall provide linear reset of glycol temperature, depending on the outdoor air temperature:

<u>OA Temp.</u>	<u>Glycol Temp.</u>
(-)15°C (5°F)	85°C (185°F)
18°C (65°F)	55°C (140°F)

- 8.8.4 The heating and cooling system's propylene glycol solution shall be provided with corrosion inhibitors supplied by the glycol manufacturer.
- 8.8.5 Provide an automatic, chemical water treatment system. The treatment shall be compatible with the chemicals used by the glycol manufacturer. It shall bring the water quality to a level acceptable by Fort Drum standards and complying with the boiler manufacturer's specifications and the glycol manufacturer's recommendations. The use of products containing hexavalent chromium (Cr) is prohibited.
- 8.8.5.1 Provide test kits and a test coupon assembly with balancing valve, shut-off valve, and plugged tees for sampling connections 25 mm (1/2 inch) diameter. Provide a drum-mounted, manually operated bung pump for the transfer of glycol into the storage and makeup/fill tank. The glycol make-up system shall automatically operate on reduction of system pressure. Provide a pressure-reducing back-flow preventer in the makeup water line serving the glycol fill station.
- 8.8.5.2 Glycol solution piping (chilled and hot water) shall be arranged for reverse-return piping. Outside of the Mechanical Room, horizontal runs of glycol piping shall be placed within interstitial spaces located above the suspended ceilings. Riser piping shall not be run within interior partitions or exterior walls. Contractor shall provide suitable enclosures for all vertical risers.
- 8.9 **Domestic Water Heaters:** Domestic Water Heater Boilers will be furnished and installed by Plumbing Division. See Section 9 for location, quantity and capacities of horizontal direct venting for Domestic Water Heaters as required by Section 8. Direct venting (horizontal type) shall be same as described above for Heating Boilers.
- 8.10 **Gas Piping:** The design and installation of natural gas distribution systems and equipment shall be in conformance with equipment and piping manufacturer's recommendations, Fort Drum Natural Gas Standards and applicable sections of ASME B31.8 and AGA-01. The installation of interior natural gas distribution systems shall be in conformance with the provisions of NFPA 54 and AGA-01. Steel pipe shall conform to ASTM A 53, Grade A or B, Type E or S, Schedule 40. The use of semi-rigid tubing and flexible connectors for gas equipment and appliances is prohibited. Provide accessible gas shutoff valve and coupling for each gas equipment item. Comply with seismic requirements. Exposed horizontal piping shall not be installed farther than 150 mm (4 inches) from the nearest parallel wall in laundry areas or areas where clothes hanging could be attempted.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

8.11 **Air Handling Units:** There shall be three (3) Air Handling Units for "tempering" of ventilation air as follows:

- 8.11.1 The air-handling units shall be installed in the third floor mechanical room. Units shall be of draw-through configuration, provided with a forward curved, belt driven, centrifugal supply fan; internal vibration isolators; chilled water (glycol solution) cooling coil, access section; hot water (glycol solution) heating coil; 30% pre-filter and 85% cartridge; filters; and mixing box complete with automatic air dampers; double wall galvanized steel casing; galvanized steel frame; condensate drain pan; high efficiency motor with adjustable sheaves; and electronic, direct digital type automatic temperature controls to facilitate operation in the "occupied"/"nighttime setback" modes of operation. The air handling units shall be provided with a discharge duct smoke detector, to be wired to the fire alarm control panel under the Electrical Division of the specifications. Contractor shall provide a sound-attenuating plenum downstream of the supply fan section to allow for top supply, air duct take-offs. Provide freeze-stat and high pressure limit switch for fan shutdown in the event fire dampers are activated.
- 8.11.2 Air handling units shall be floor-mounted on 150 mm (4 inch) thick reinforced concrete pad or suspend units per manufacturer's instructions on 16 mm (5/8 inch) diameter galvanized threaded rods and supplemental galvanized trapeze angle support steel members with spring type, seismically restrained suspension vibration isolators and diagonal sway bracing. Access space for service and maintenance shall be provided in accordance with code and manufacturer's recommendations. If AHU's are suspended, the Contractor shall provide service platforms with access; these shall comply with OSHA requirements. Provide horizontal or vertical coil pull space for all coils.
- 8.11.3 Heating and cooling glycol solution piping connections to air handling unit coils shall be provided with isolation valves, automatic two-way control valves, calibrated balancing valves, strainers, temperature and pressure test plugs. Condensate drain piping of Type M copper shall be coordinated with the sanitary sewer drainage piping design. The condensate drainpipe shall be provided with a P-trap of height adequate to offset the unit draw-through fan total pressure in inches-water-gauge, plus two-inch water-gauge pressure. Air handling unit locations shall be coordinated with all disciplines. Outside air shall be taken into each air handling unit in accordance with the outside air system design parameters. Make-up air shall be taken through louvers in the exterior wall, pitched at bottom back toward louver, properly ducted to the units, and shall be coordinated with the locations of relief and exhaust louvers to prevent "short circuiting" of intake and exhaust air. Intake openings shall be located at least 3 meters (10 ft.) away (horizontally) from the relief/exhaust outlets, and at least 0.6 meters (2 ft.) below them, in accordance with UFC 4-010-01, DoD Minimum Antiterrorism Standards for Buildings.
- 8.11.4 When on the heating cycle, the air-handling unit shall supply tempered air at a constant temperature, determined by an adjustable setpoint. The heat loss through the building's exterior envelope shall be offset by the building's hydronic terminal radiation heating system.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 8.11.5 When on the cooling cycle, the air-handling unit shall supply tempered air at a constant temperature, determined by an adjustable setpoint. Space cooling shall be performed by room fan coil units.
- 8.12 **Air-Cooled Water Chiller:** A packaged air-cooled water (glycol antifreeze solution) chiller shall provide the central source of the cooling media for the building. The water chiller shall be located outdoors. See the site drawings for the location of chiller.
- 8.12.1 Air-cooled chiller unit shall be factory-assembled and pre-wired packaged unit. Its Energy Efficiency Ratio (EER) shall be 11.0 or higher. The unit shall be furnished with at least four stages of cooling for part-load capacity control. The staging shall be accomplished through the use of multi-compressor units or by the use of more than one single-compressor unit, to provide the necessary part load capacity control. Evaporator unit shall be tube-in-shell design with seamless internally finned copper tubes, roller-expanded into tube sheets. Evaporator shell shall be insulated with 20 mm (.75 inches) thick flexible insulation with a K value of 0.26. Design, test, and stamp refrigerant side maximum working pressure of 300 psig, and water-side for maximum working pressure of 150 psig, in accordance with ANSI/ASME Section 8. The water chiller shall be provided with a full factory-installed sound attenuation package.
- 8.12.2 Provide concrete mounting pad on grade size as required to allow for service and NEC clearances in accordance with the manufacturer's written installation instructions and recommendations for maintenance, access and unobstructed condenser air intake flow.
- 8.12.3 The chilled water (glycol solution) piping system shall be field-coupled to an air-cooled chiller unit by means of field fabricated underground (FFIU) piping routed between the ground floor mechanical room and the water chiller located outdoors. Provide the pumps. Chilled water supply and return piping 100 mm (4") or less in diameter shall be insulated with 45 mm (1.75") phenolic insulation. Chilled water loop shall utilize an aqueous solution of inhibited propylene glycol that provides freeze protection to -29C (-20° F).
- 8.13 **Ductwork and Accessories:** These shall comply with guidelines provided in applicable paragraphs of this Section.
- 8.13.1 **Duct Design:** All ducts shall be constructed of sheetmetal. Flexible duct runouts shall be insulated metallic and shall be limited to 1524 mm (60 in.) spans, including not more than one radius bend.
- 8.13.1.1 Duct construction shall comply with SMACNA requirements for the following duct classifications:
- a. Supply Ducts: Pressure class 50 mm (2 in.) water gage.
 - b. Return/Relief/Exhaust Ducts: Pressure class 25 mm (1 in.) water gage.
 - c. All Ducts: Seal Class B
 - d. Rectangular Ducts: Leakage Class 12

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

e. Round Ducts: Leakage Class 6

- 8.13.1.2 Contractor shall coordinate duct locations with all other disciplines.
- 8.13.1.3 Provide sound-attenuating plenums between the supply air fan discharges and the supply ducts. All take-off and converging flows shall be accomplished using 45° fittings. Air scoops shall not be used.
- 8.13.1.4 Except for air transfers and leakages, as they are defined in NFPA 90A and NFPA 90B, corridors shall not be used as a portion of a supply, return, or exhaust system serving adjoining areas.
- 8.13.1.5 All ductwork, duct openings and plenums shall be designed to a maximum RC Mark II value of 35(N) per ASHRAE Applications Volume (latest edition).
- 8.13.1.6 Access doors shall be installed such that all dampers and motor operator devices can be services.
- 8.13.2 Ductwork shall be lined 4.5 m (15 ft) from the AHU's and fans or to the second 90° elbow, whichever is longest. Lined ductwork shall be 38 mm (1-1/2 in.) thick, 24 Kg/m³ (1.5 lb/ft³) acoustic fiberglass liner with vinyl or neoprene coating resistant to fungal growth. Where internally lined duct meets unlined ductwork, all exposed edges and transverse joints shall be field-encapsulated with manufacturer's edge coating and shall be neatly butted without gaps. Liner installation shall comply with "NAIMA Duct Liner Installation Guidelines."
- 8.13.3 Ventilation and Exhaust Openings: Outdoor Air intakes shall be placed at least 3 m (10') above floor/grade level, in soffits or roof overhangs. Exhaust and relief outlets shall be located in the gabled walls of the Loft, at not less than 3 m (10 ft) above ground. Outside air shall be taken through outdoor air louver with louvers to be "double rain guard type" and sufficiently sized to prevent entrainment of rain and snow with birdscreen and attached to a plenum (minimum 4 feet deep) with a sloping bottom toward the exterior wall, and having either weep hole or means of draining water collected at the bottom of plenum to be drained outdoors.
 - 8.13.3.1 Provide anti-personnel security bars in all openings that are larger than 0.62 sq meter (6.67 sq. ft.) in cross-sectional areas.
 - 8.13.3.2 Exhaust and relief vents shall not be located near outdoor intakes, to prevent short-circuiting of exhaust/relief and outside air intake. Maximum sound level for exhaust/relief outlets shall be 4 sones.
 - 8.13.3.3 Air intake and exhaust openings shall be provided with motor operated dampers to close when AHU's are in the unoccupied or shutt-off mode.
 - 8.13.3.4 A 100mm (4 inch) diameter dryer vent shall individually and directly discharge to the exterior. The vents shall be rigid and corrosion resistant metal construction with exterior wall cap and backdraft damper. Vent pipes

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

shall be a maximum of 6100mm (20 feet) long with no more than three right angle elbows. Means should be provided for cleaning out entire length of dryer vents.

- 8.13.4 Acoustic Requirements: An acoustic analysis shall be performed for each air handling unit, air inlet and air outlet, and in accordance with the RC Mark II method outlined in the latest edition of ASHRAE Applications Handbook. The following Room Criteria ratings shall be required:

Maximum Permissible RC(N) Mark II Values of Background Noise Due to the HVAC System	
ROOM	RC(N)
Living/Sleeping Corridors Multi-Purpose Toilets Vestibules	35

- 8.13.5 Volume Dampers: Manual-balancing dampers shall be furnished with accessible operating mechanisms. Where operators occur in finished portions of the building, operators shall be chromium plated with all exposed edges rounded. Manual volume control dampers shall be operated by locking-type quadrant operators. Dampers shall be 2 gauges heavier than the duct in which installed. Unless otherwise indicated, multi-leaf dampers shall be opposed blade type with maximum blade width of 305 mm (12 in.). Access doors or panels shall be provided for all concealed damper operators and locking set-screw and bushing. Unless otherwise indicated, the locking-type quadrant operators for dampers, when installed on ducts to be thermally insulated, shall be provided with stand-off mounting brackets, bases, or adapters to provide clearance between the duct surface and the operator not less than the thickness of the insulation. Stand-off mounting items shall be integral with the operator or standard accessory of the damper manufacturer. Volume dampers shall be provided on all runouts to supply outlets and return/exhaust inlets, regardless of any dampers that are furnished integral with air inlets and outlets. Contractor shall also provide balancing dampers in all duct branches in outdoor air intake ducts and exhaust ducts, as needed for system balancing.

- 8.13.6 Air Filters: Two-stage air filtration shall be provided for the air-handling units. Pre-filters shall be 25 to 30% efficient, and final filters shall be 85% efficient, as defined by ASHRAE 52.1. All filters shall be UL Class 2.

8.13.6.1 Provide each filter stage with its dedicated control to signal the need for filter change due to loading.

- 8.13.7 Fire and Fire/Smoke Dampers: Fire dampers shall be of the alignment type and shall be fire rated according to the areas being protected. Fire dampers shall conform to the requirements of NFPA 90A and NFPA 90B, UL 555, and IBC. Fire dampers shall be installed in accordance with NFPA 90A and NFPA 90B. Fire dampers shall be automatic operating type and shall have a dynamic rating suitable for the maximum air velocity and pressure differential to which they will be subjected. Fire and Fire/Smoke dampers shall be approved for the specific application, and shall be installed according to their listing. Fire dampers shall be Type "B", with curtain blades outside of the air stream in their unreleased, retracted position. Penetrations of "rated ceilings" shall be

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

protected as required by NFPA and UL. Fire/Smoke Dampers shall comply with UL 555 and UL 555S, respectively.

- 8.13.8 Diffusers, Grilles and Registers: Air distribution devices shall be factory-fabricated of steel, corrosion-resistant steel, or aluminum and shall distribute the specified quantity of air evenly over space intended without causing noticeable drafts, air movement faster than 0.25 m/s in occupied zone, or dead spots anywhere in the conditioned area. Inlets and outlets shall be sound rated and certified according to ASHRAE Standards. Diffusers and registers shall be color coordinated with the Architectural Design.

8.14 Factory-Fabricated & Insulated Underground (FFIU) Piping:

- 8.14.1 Factory-fabricated, insulated and jacketed underground piping designed for the distribution of chilled water/glycol solution.
- 8.14.2 Carrier Pipe: A-53 Grade B ERW in Schedule 40.
- 8.14.3 Insulation: Polyurethane foam with the following minimum characteristics: K Factor = 0.13, Density = 2 pcf, Closed Cell Content = 90-95% in conformance with MIL-1-24172 and ASTM C-591 completely filling the annular space between carrier pipe and jacketing.
- 8.14.4 Jacketing Material: High impact, seamless Polyvinylchloride (PVC) Class 12454-B compound conforming to ASTM 1784, Type 1, and Grade 1. (No FRP jacketing will be allowed.) Minimum jacket thickness shall be as listed below:
- 8.14.4.1 Nominal pipe size: 152 mm (4 inch)
- 8.14.4.2 Minimum insulation thickness: 44 mm (1.75 inch)
- 8.14.4.3 Jacket size: 203 mm (8 inch)
- 8.14.4.4 Jacket thickness: 80 mills minimum
- 8.14.5 All fittings shall conform to pipe type and shall be insulated and jacketed with materials supplied by the system supplier and as per manufacturers' standard procedures. Fittings shall be fitted with a watertight mastic end seal at jacket and pipe surfaces.
- 8.14.6 Each length of pre-insulated pipe shall be joined by welding. After welding and testing, all joints shall be insulated and sealed as per manufacturer's standard procedures. All field cuts shall be sealed with a field applied end seal.
- 8.14.7 Anchors shall be 12 mm (½") thick plate steel attached to internal pipe and sealed to pipe jacketing as per system supplier's recommendations.
- 8.14.8 Installation, backfill and testing shall be in strict accordance with manufacturer's instructions. Inspection and certification by manufacturer's representative are required.
- 8.14.9 Manufacturer of FFIU shall submit copy of certificate to the effect that installation of FFIU conforms to manufacturer's requirements.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

- 8.15 **Commissioning**: The final design will include all the supporting data listed in paragraphs k and l of Chapter 9, of publication TI-800-03.
- 8.16 **Room-by-Room Requirements**: Refer to Part 11 of Section 01010 for specification of Room-by-Room Requirements.

SECTION 9.0 - MECHANICAL - PLUMBING DESIGN

9.1 **Requirements, Criteria Sources and References:** Design and installation shall conform to the latest edition of the references listed below, unless otherwise indicated herein.

9.1.1 **Commercial / Military Codes and Design Manuals:** Design and installation shall conform to the latest editions of the referenced listed below, unless otherwise indicated herein.

- 9.1.1.1 (IBC) International Plumbing Code
- 9.1.1.2 NANP 1110-1-1, US Army Corps of Engineers, New York District (NAN), Manual of Standard Procedures for Planning and Design
- 9.1.1.3 TI 800-01, Design Criteria
- 9.1.1.4 TI 800-03, Technical Instructions Technical Requirements for Design Build
- 9.1.1.5 TI 809-04, Seismic Design for Building (Refer to Section 6.0)
- 9.1.1.6 EM 385-1-1, US Army COE Safety and Health Requirements Manual
- 9.1.1.7 ER 414-1-10, Contractor Submittal Procedures
- 9.1.1.8 ER 415-345-42, Construction Costs, Cost Estimating and Reserves for Contingencies
- 9.1.1.9 ER 1110-1-263, Chemical Data Quality Management for HTW Remedial Activities
- 9.1.1.10 ER 1110-345-122, Interior Design
- 9.1.1.11 ER 1110-345-700, "Design Analysis"
- 9.1.1.12 ER 1110-345-710, "Drawings, Military Construction"
- 9.1.1.13 ER 1110-345-720, "Specifications, Military Construction"
- 9.1.1.14 UFC 3-400-02, "Engineering Weather Data"
- 9.1.1.15 TM 5-810-5, Plumbing
- 9.1.1.16 UFC 3-420-01FA, Design: Plumbing Control Systems
- 9.1.1.17 Unified Facilities Guide Specifications for use with SPECSINTACT Version 3.1.270 or later software

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 9.1.1.18 Current Version of Tri-Service A/E/C CADD Standards, Special Data Standards, and A/E Deliverable Standards
- 9.1.1.19 New Army Barracks Construction Criteria, dated July 11, 2002
- 9.1.1.20 ETL 1110-3-489, Domestic Water Heaters for Barracks
- 9.1.1.21 American Society of Testing Materials (ASTM)
- 9.1.1.22 Underwriters Laboratories (UL)
- 9.1.1.23 National Fire Protection Association (NFPA)
- 9.1.1.24 National Institute of Occupational Safety and Health (NIOSH) Standards
- 9.1.1.25 Occupational Safety and Health Administration (OSHA) Standards
- 9.1.1.26 ETL 1110-3-491, Sustainable Design for Military Facilities
- 9.1.1.27 Sustainable Project Rating Tool (SPiRiT)
- 9.1.1.28 American National Standards Institute (ANSI)
- 9.1.1.29 American Society of Mechanical Engineers (ASME)
- 9.1.1.30 American Society of Sanitary Engineering (ASSE)
- 9.1.1.31 FCCHR-01 Manual of Cross Connection Control
- 9.1.1.32 Plumbing and Drainage Institute (PDI)
- 9.1.1.33 American Gas Association (AGA)
- 9.1.1.34 ARI 1010 and Lead Contamination Control Act for Water Coolers
- 9.1.1.35 American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE)
- 9.1.1.36 American Water Works Association (AWWA)

9.2 Functional and Technical Requirements:

- 9.2.1 Plumbing system shall be designed and installed in accordance with the latest edition of the (IBC) International Plumbing Code. Inspection and testing of the plumbing system shall be performed as prescribed in the (IBC) International Plumbing Code. Specified materials and equipment shall be standard products of a manufacturer regularly engaged in the manufacture of such products. Specified equipment shall essentially duplicate equipment that has performed satisfactorily at least two years prior to bid opening.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

9.2.2 Design Calculations:

- 9.2.2.1 Domestic hot water heater design shall be based on Army Technical Letter ETL 1110-3-489, Domestic Water Heaters for Barracks. Use 2.5 gpm flow from each showerhead for design calculations.
- 9.2.2.2 Piping design shall be based on the (IPC) International Plumbing Code, National Standard Plumbing Code or ASHRAE Standards (whichever is stricter) for domestic water, sanitary waste and vent piping. All water piping shall be sized to limit water velocity in the pipe to 2440 mm/sec (8 feet/sec), unless a lower velocity is recommended by the plumbing fixture manufacturer. An isometric diagram of the water system and sanitary sewer system shall be included in the design submittal.

9.2.3 Domestic Water Heater System:

- 9.2.3.1 Design shall be based on a total peak demand of 1.80 Lps (1716 gph) of 60°C (140°F) delivered in a 19 minute peak period with an incoming temperature of 4°C (40°F) for each building.
- 9.2.3.2 A minimum of (2) two modular high efficiency copper fin-tube boilers shall be provided in each building at a capacity of 60%. Burners utilizing pulse combustion principles will not be accepted. Controls shall be provided to allow for staggered and lead-lag operation and shall be integrated with the building DDC system. Control Panel shall be located for easy access and have a protective cover, which can be removed with no tools. Solid-state controls shall be used to monitor and control all operating and safety functions. Standard operating controls and equipment shall include ignition, operating aquastat, manual re-set hi-limit, automatic main and redundant gas valve, master switch with pilot light, inlet/outlet temperature gauges, ASME safety relief valve and flow switch. Boilers shall be equipped for 120 V, single phase, 60 Hertz. Complete factory certified operating and start-up instructions shall be furnished with unit.
- 9.2.3.3 The jacket panels shall be steel construction and coated with a baked-on enamel finish. All waterways shall be of copper/brass construction. The heat exchanger shall employ a drain to remove corrosive condensate. Boiler heat exchanger shall carry a minimum 5 year warranty.
- 9.2.3.4 Each boiler shall utilize a separate pump to maintain constant circulation through the boiler whenever boiler is enabled. Circulation rate and duration subsequent to boiler shutoff shall be in accordance with manufacturer's recommendations.
- 9.2.3.5 Unit shall meet or exceed ASHRAE 90.1b-2001.
- 9.2.3.6 Each boiler shall have a minimum combustion efficiency rating of 88% and designed for operation up to 345kPa (50 psig) pressure. Burners shall be of stainless steel and/or of corrosion-resistant construction. The burner gas train shall be AGA and FM approved. Provide all required boiler safety

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

devices, forced or induced draft natural gas burners and suitable only for direct venting applications. The boilers shall be equipped with ASME rated pressure relief valves. Boiler combustion safety controls shall utilize LED readout.

- 9.2.3.7 The selected boilers shall have the smallest footprint possible and shall be mounted on anchored, 100 mm (4 inches) thick reinforced concrete housekeeping pad with a 100 mm (4 inches) beyond the footprint of the equipment. All code-mandated and manufacturer's specified maintenance clearances shall be provided in the mechanical room containing the boilers.
- 9.2.3.8 The boiler room shall be provided with natural gas and carbon monoxide gas leakage monitoring devices. These devices shall be connected to the fire alarm control panel, and shall effect automatic shutdown of gas-fired boilers and domestic hot water heaters, upon detection of natural gas leakage or carbon monoxide.
- 9.2.3.9 Direct venting shall be horizontal type, furnished and installed in strict accordance with manufacturer's installation instructions of stainless steel and/or CPVC and only as recommended by the manufacturer. Masonry chimneys and/or listed Type B or Type L vents shall not be used.
- 9.2.3.10 Storage tank temperature shall be 60°C (140°F) and hot water supply temperature to plumbing fixtures shall be 43°C (110°F). This shall be done with anti-scald tempering valves or a thermostatic mixing valve.
- 9.2.3.11 Circulating pumps for domestic hot water shall be electrically driven single stage centrifugal type. Recirculation piping shall be extended to the last (farthest) bathroom fixture group on each wing, in accordance with International Plumbing Code.
- 9.2.3.12 One 5680L (1500 gal.) glass lined horizontal or vertical storage tank with insulation and two boilers, with a recovery rate of approximately 0.573 Lps (545 gph) each, would satisfy the design requirements and fit into the Ground or Second Floor Mechanical Room.
- 9.2.3.13 A properly sized in-line expansion tank shall be provided for the domestic hot water system.
- 9.2.4 Fixtures: Fixtures shall be water conservation type in accordance with the (IBC) International Plumbing Code. Fixtures shall be provided complete with fittings, and chromium or nickel-plated brass (polished bright or satin surface) trim.
 - 9.2.4.1 Vitreous china plumbing fixtures shall conform to ANSI A112.19.2, Vitreous China Plumbing Fixtures. Stainless steel fixtures shall be in accordance with ANSI A112.19.3, Stainless Steel Plumbing Fixtures (residential design). Plastic fixtures shall conform to ANSI Z124. Enameled cast iron plumbing fixtures shall comply with ANSI A112.19.1, and enameled steel fixtures shall comply with ANSI A112.19.4.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 9.2.4.2 Plumbing fixture traps shall be chromium-plated, adjustable-bent tube, 20-gauge brass.
- 9.2.4.3 Faucets shall be single-control type, with seals and seats combined in one replaceable cartridge designed to be interchangeable among lavatories, bathtubs and kitchen sinks, or having replaceable seals and seats removable either as a seat insert or as a part of a replaceable valve unit. Water flow shall be no more than .158 L/s (2.5 gpm) from any faucet.
- 9.2.4.4 Shower and bath combination shall be controlled by a diverter valve. Shower and bath combinations shall be provided with waste fitting pop-up, concealed with all parts removable and renewable through the overflow and outlet openings in the tub. Showers and shower and bath combinations shall be equipped with a combination valve and flow control device to limit the flow to 0.158 L/s (2.5 gpm) at pressures between 137.9 to 413.7 kPa (20 and 60 psi). A mounting height of 6'-8" minimum at the point of discharge from the showerhead shall be provided.
- 9.2.4.5 Individual shutoff or stop valves shall be provided on water supply lines to all plumbing fixtures except bathtubs and showers. Shutoff valves shall be provided for each bathroom group.
- 9.2.5 Water closets shall have vitreous china elongated bowl, direct fed siphon jet action, fully glazed 51 mm (2-inch) ballpass trapway, 40 mm (1-1/2 inch) top spud, 2 bolt caps and shall be floor mounted. Water consumption shall be no more than 6 L (1.6 gal) per complete flushing cycle. All waterclosets shall have toilet seats with covers except in the Public Restrooms where open front seats without covers are required. Flush valves shall be exposed at all locations and mounted 990 mm (39 inches) above floor.
- 9.2.6 Lavatories shall be wall mounted, vitreous china, minimum 508 by 457 mm (20 by 18 inches) in size in the Public Restrooms. Bathroom lavatories shall be integral with counter top. Lavatories shall have pop-up drains.
- 9.2.7 Bathtub/Shower combination shall be one piece gel coated with ceiling top, glass fiber reinforced polyester construction, minimum 1524 mm L x 762 mm W x 2136 mm H (60 inches L x 30 inches W x 84 inches H) in size. Minimum surface thickness shall be 16 mils. Resin to filler content in reinforcement layers shall be greater than 70 percent. Urethane foam boards in wall panels. Factory cast pre-leveled bottoms for floor support and slide-in installation. Insulate and include stiffeners below bathtub. A single handle anti-scald mixing valve and chrome plated brass showerhead should be provided per UFC 4-721-11.1.
- 9.2.8 Kitchen sinks shall be Type 302 stainless steel, 20 gauge minimum, seamless drain and sound deadened. Sinks shall be single bowl, minimum 560 mm L x 495 mm W x 184 mm deep (22 inches L x 19-1/2 inches W x 7-1/4 inches deep) in size, self mounting without mounting rings, complete with cup strainer and plug.
- 9.2.9 Mop sinks shall be floor mounted, precast terrazzo construction, triangular shaped, minimum 610 mm x 610 mm x 305 mm high (24 inches x 24 inches x 12 inches high) in size with stainless steel caps on all curbs. Mop sink faucet shall be wall mounted

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

chrome plated with vacuum breaker, integral stops, adjustable wall brace, pail hook, 20 mm (3/4 inch) hose thread on spout, 762 mm (30 inches) long flexible, heavy duty rubber hose and hose bracket.

- 9.2.10 Electric water coolers shall be wall mounted, stainless steel, lead free with front and side pushbars and have a capacity of 30 liters/hour (8 gallons/hour). Water coolers shall conform to the requirements of ARI 1010 and the Lead Contamination Control Act of 1998. Each floor will have an electric water cooler and the ground floor unit shall be high-low type.
- 9.2.11 Mud Room service sinks shall be floor mounted, enameled cast iron, minimum 610 mm x 510 mm x 305 mm deep (24 x 20 inches x 12 inches deep) in size with stainless steel rim guard. Sink shall have an enameled cast iron 77 mm (3 inch) P-trap with strainer. Sink faucet shall be rough plated with vacuum breaker.

9.3 Piping Systems:

- 9.3.1 Sanitary Sewer Piping System shall be service weight cast iron with hub and spigot, neoprene gasketed joints below slab and schedule 40 PVC plastic or copper DWV pipe and fittings above floor. Piping shall be extended 1.5 meters (5 feet) outside of building to civil portion of work. An individual vent shall protect every fixture trap. Plumbing vents through roof should be located as close to ridge as possible and have extra supports due to winter conditions. Indirect waste and condensate piping system shall be Type "M" copper, insulated and must discharge through an air gap. Building drain shall be 153 mm (6 inch) minimum.
- 9.3.2 Domestic Water Piping System shall be Type "K" copper below slab and Type "L" copper above floor in accordance with ANSI B16.22 and ANSI B16.26 for copper fitting requirements. Piping shall be extended 1.5 meters (5 feet) outside of building to civil portion of work. All water piping above floor shall be insulated. Building water service shall be 77 mm (3 inch) minimum. The entire water distribution shall be disinfected in accordance with AWWA Standards.
- 9.3.3 Piping shall be concealed except in Mechanical and Electrical Rooms.
- 9.3.4 Provide fire rated wall and floor penetrations where passing through fire rated construction.
- 9.3.5 Piping identification shall be in accordance with ASME A13.1.
- 9.3.6 Piping insulation type shall be fiberglass, closed cell foam, or phenolic foam and comply with ASTM E84, NFPA 255 and UL 723 Standards. Domestic cold water piping shall be insulated with vapor jacket. Domestic hot water runouts shall have insulation with all service jacket. Indirect and condensate waste piping shall be insulated with minimum vapor jacket.

9.4 Miscellaneous Items:

- 9.4.1 Cleanouts shall be provided at each change in direction of sanitary sewer lines, at the intervals specified in the (IBC) International Plumbing Code, and at the building service entrance. All cleanouts shall be permanently accessible. Provide access panels or cover plates in exposed areas.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 9.4.2 Exterior wall hydrants shall be non-freeze, exposed, anti-siphon self draining type, with integral backflow preventer, bronze casing, polished bronze, wall plate, 20 mm (3/4 inch) hose thread spout and removable key. Provide one shutoff valve per wall hydrant. One hydrant shall be provided outside the Mechanical Room, Laundry, Multi-Purpose Room, and one at each end of the building outside the housing module toilet. Piping will be in piping chase for bathtub, at Toilet Rooms and exposed in other locations.
- 9.4.3 Interior hose bibbs shall be bronze or brass with replaceable hexagonal disc, 20 mm (3/4 inch) hose thread spout and vacuum breaker in conformance with ANSI/ASSE 1011. Hose bibbs shall be installed in each Mechanical Room. Combination hot and cold water hose bibbs shall be installed in the Mud Room (one at each boot cleaning station).
- 9.4.4 Washing machine hose boxes shall be recessed with single faceplate and shall be constructed of plastic or sheet steel. Steel boxes shall have a corrosion-resistant epoxy enamel finish. Washer connections shall include a 50 mm (2 inch) drain, 20 mm (3/4 inch) hose thread supplies, valve and stop body for hot and cold water with shut off valves. Boxes shall be mounted a minimum of 865 mm (2 feet – 10 inches) above the finish floor. Each washer shall have a hose box.
- 9.4.5 A positive-displacement type water meter assembly in compliance with AWWA C700 and a reduced pressure type backflow preventer in compliance with New York State Department of Health Standards shall be installed at the domestic water service entrance in the ground floor Mechanical Room. Indirect waste from the backflow preventer device shall discharge through exterior wall and spill over grade.
- 9.4.6 Cold water makeup for any HVAC equipment shall be protected by a backflow preventer device in compliance with New York State Department of Health Standards. All backflow devices must be installed to meet all height and accessibility requirements for annual testing; (AWWA Standard) factory test results must be supplied for a base line on the backflow device. NOTE: No direct water connection shall be made to the glycol system.
- 9.4.7 Water hammer arrestors shall be installed in accordance with ANSI A112.26.1 and PDI WH-201.
- 9.4.8 A capped cold water valved outlet and floor drain shall be provided in the vicinity of the ice machine located in the vending areas.
- 9.4.9 Floor drains with trap primers shall be installed in Mechanical Rooms, Laundry, Vestibules, and in the vicinity of ice machines.
- 9.4.10 Mud Room boot washing area drains shall be all welded steel combination separator drains, minimum 765 mm x 1135 mm x 815 mm deep (30 inches x 44-5/8 inches x 32 inches deep) with 102 mm (4 inches) outlet with outlet vent connection, 50 mm (2 inch) internal rear vent connection, visible double wall outside trap seal, three (3) easily removable stainless steel grates with slotted inlet grate openings, grates suitable for pedestrian traffic, three (3) removable sediment and mud pans, separator screen, filter screen and epoxy coated.
- 9.4.11 Provide concrete housekeeping pads under domestic water boilers and storage tank.

SECTION 10.0 - ELECTRICAL DESIGN

10.1 Applicable Codes, Regulations, Standards and Criteria:

- 10.1.1 Commercial Code and Standards: Design and installation shall conform to the latest editions of the references listed below, unless otherwise indicated herein.
 - 10.1.1.1 ANSI C2, National Electrical Safety Code
 - 10.1.1.2 ANSI C57.12.26 Requirements for Pad-Mounted, Compartmental-Type, Self-Cooled, Three Phase Distribution Transformers for use with Separable Insulated High-Voltage Connectors, High-Voltage, 34500GrdY/19920 Volts and Below; 2500 kVA and Smaller
 - 10.1.1.3 ANSI C57.12.27 Conformance Requirements for Liquid-Filled Distribution Transformers Used in Pad-Mounted Installations, Including Unit Substations
 - 10.1.1.4 ANSI C57.12.28 Switchgear and Transformers - Pad-Mounted Equipment - Enclosure Integrity
 - 10.1.1.5 ANSI C84.1, Electric Power Systems and Equipment - Voltage Ratings
 - 10.1.1.6 ANSI A117.1, Buildings and Facilities - Providing Accessibility and Usability for Physically Handicapped People
 - 10.1.1.7 EIA/TIA 568-B Commercial Building Telecommunications Cabling Standard, Parts 1 and 2
 - 10.1.1.8 EIA/TIA 568-B.2-1 Transmission Performance Specifications for 4-Pair 100 Ohm Category 6 Cabling
 - 10.1.1.9 EIA/TIA 569-A Commercial Building Standard for Telecommunications Pathways and Spaces
 - 10.1.1.10 EIA/TIA 606 Administration Standard for the Telecommunications Infrastructure of Commercial Buildings
 - 10.1.1.11 EIA/TIA 607 Commercial Building Grounding/Bonding Requirements
 - 10.1.1.12 IEEE C62.41 Surge Voltage in Low Voltage AC Power Circuits
 - 10.1.1.13 IEEE Std 241 Electrical Power Systems in Commercial Buildings (The Gray Book.)
 - 10.1.1.14 IEEE Std. 242, Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems (The Buff book.)
 - 10.1.1.15 IES, Lighting Handbook

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 10.1.1.16 NFPA 70, National Electrical Code
- 10.1.1.17 NFPA 72, National Fire Alarm Code
- 10.1.1.18 NFPA 101, Code for Safety to Life from Fire in Buildings and Structures
- 10.1.2 **Military Regulations and Criteria:** The RFP and design shall conform to the latest editions of the references listed below, unless otherwise indicated herein.
 - 10.1.2.1 NANP-1110-1-1, US Army Corps of Engineers New York District, Manual of Standard Procedures for Planning and Design
 - 10.1.2.2 TI 800-01 Technical Instructions Design Criteria and Appendix B - Unaccompanied Personnel Housing
 - 10.1.2.3 FEMA 204, Seismic Design for Buildings
 - 10.1.2.4 TM 5-811-1, 1995 – Electrical Power Supply and Distribution
 - 10.1.2.5 Unified Facilities Criteria (UFC 4-721-11.1) for Unaccompanied Enlisted Personnel Housing (UEPH) Complexes
 - 10.1.2.6 Unified Facilities Criteria (UFC 3-530-01), Interior Electrical Systems
 - 10.1.2.7 Unified Facilities Criteria (UFC) 3-600-01, Design: Fire Protection Engineering for Facilities
 - 10.1.2.8 Installation Information Infrastructure Architecture (I3A) Implementation Guide
- 10.2 **General:**
 - 10.2.1 All work shall comply with the latest edition of the National Electrical Code (NEC) and National Electrical Safety Code (NESC).
 - 10.2.2 All materials, equipment, fixtures and appurtenances shall be listed or labeled by Underwriters Laboratories, Inc., or a similar organization acceptable to the Government.
 - 10.2.3 All electrical work, including conduits and boxes, shall be concealed in finished spaces. Outlet boxes and wiring devices shall be flush-mounted in finished spaces. For this purpose, finished spaces include the entire building except for mechanical rooms, electrical rooms, electrical closets in the hallways, communications rooms, and janitor closets.
 - 10.2.4 Provide power to all contractor furnished, contractor installed; government furnished, contractor installed; and government furnished, government installed equipment.
 - 10.2.5 All equipment locations shall be coordinated prior to any rough-ins.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

- 10.2.6 The Contractor shall provide all disconnect switches, motor starters, control equipment and control wiring for all equipment provided under this contract.
- 10.2.7 Any electrical work potentially affecting existing electrical or communication systems shall be coordinated through the Contracting Officer. Contact Contracting Officer in writing at least 14 days prior to any planned power or communications outages.
- 10.2.8 Excavation permits shall be obtained from the Fort Drum Public Works.
- 10.2.9 The installation must comply with the seismic requirements of FEMA 204. See section 6.0, Structural Design for further criteria.
- 10.2.10 Provide pull wires in all spare conduits and as required by 13A (publication listed in paragraph 10.1.2.8). Cap spare conduits that do not terminate in equipment.
- 10.2.11 Firestop all penetrations in fire-rated elements (walls, decks, etc.).
- 10.2.12 Label all equipment and circuits. Label each end of spare conduits and cables with the location of the opposite end.
- 10.2.13 All information technology system work shall comply with the Installation Information Infrastructure Architecture (I3A) Implementation Guide.
- 10.2.14 All work shall comply with the latest edition of the Fort Drum Energy Guide.
- 10.2.15 Label all electrical equipment including panelboards, disconnect switches, motor starters, contactors, etc. Install wire markers for each conductor at panelboard gutters, pull boxes, outlet and junction boxes, and each load connection.
- 10.2.16 Demand factors may be applied as permitted by the National Electrical Code.
- 10.2.17 Raceways crossing structural expansion joints or seismic joints shall be provided with suitable expansion fittings or other suitable means to compensate for the building expansion and contraction and to provide for continuity of grounding.
- 10.2.18 All requirements in this section apply to all three buildings unless specifically noted otherwise.
- 10.2.19 Provide warning tape with a suitable legend above all underground duct banks and conduits (power and signal).
- 10.3 **Exterior Electrical System:** The Contractor shall provide an underground electrical service.
 - 10.3.1 **Primary Service:** Tap the conductors in the existing 13.2 kV line in a designated existing manhole as shown on the site plan.
 - 10.3.1.1 Provide two 15 kV class, 3-phase low-profile pad-mount fused sectionalizing enclosures (fuse terminal) next to the manhole where the connection will be made. Provide 4 sets of terminals: 2 – 600 amp sets for

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

the main line (source side), 1 – 200 amp set for the Barracks tap (load side), and 1 – 200 amp set for a spare tap (load side). Provide fuses for the Barracks transformer tap. The source side shall have a 600 amp bus and shall be unfused. One pad-mount switch will be used for two buildings. The other switch will be used for one building with a spare tap for a future building.

- 10.3.1.2 Provide an underground non-reinforced concrete encased duct bank with two (1 active and 1 spare) 129 mm (5") non-metallic PVC conduits from the fuse terminal to a new pad mounted transformer. Provide manholes or handholes as required to keep cable pulling stresses within manufacturer's recommendations. Provide warning tape with a suitable legend above the duct bank.
 - 10.3.1.3 Provide spare conduits from the tap section of the fuse terminal unit to the existing manhole and from the spare tap section of the fuse terminal to a point approximately 1.5 m (5 feet) from the fuse terminal.
 - 10.3.1.4 Minimum cover for the primary power duct bank shall be as shown on the site plans.
 - 10.3.1.5 Medium-voltage cable joints shall comply with IEEE Std 404 and IEEE Std 592. Medium-voltage cable terminations shall comply with IEEE Std 48. Joints shall be the standard products of a manufacturer and shall be of the factory preformed type. Joints shall have ratings not less than the ratings of the cables on which they are installed. Splice kits shall be of the premolded splice and connector type. Joints used in manholes, handholes, vaults and pull boxes shall be certified by the manufacturer for waterproof, submersible applications. Tape type splices are **not** acceptable. Medium-voltage cable joints shall be made by qualified cable splicers only. Underground splicing kits shall be 15 kV class heat-shrink or type RTE splices and terminations at the medium-voltage sectionalizing switch 600 ampere terminations shall be 15 kV class, separable insulated connectors, type BOL-T connectors, or approved equal.
 - 10.3.1.6 Fault and Overcurrent Protection. Line-side and load-side overcurrent and fault protection devices shall be coordinated to isolate any electrical fault from the rest of the system and for all overload conditions. After contract award, the contractor shall contact the Contracting Officer to obtain the information (i.e., site one lines, etc.) necessary to provide this coordination.
- 10.3.2 Primary Conductors: The phase conductors on the line side of the sectionalizing switch shall be 500 MCM with a #4/0 neutral. The phase conductors (primary cables) downstream of the sectionalizing switch shall be single copper conductor 15kV, 133% insulated, type MV90, with a semi-conducting shield, and EPR insulation sized by per NEC for the loads, but shall be a minimum of #2. Provide #2 bare copper ground wire with the phase conductors.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

- 10.3.3 **Transformers:** The building transformer for each building (three transformers) shall be 3-phase, 13.2 kV, delta primary with 480/277 volt, grounded wye secondary, pad-mounted, oil filled, air cooled, and enclosed per ANSI C57.12.28, loop-feed type.
- 10.3.3.1 The primary cabinet shall be dead front with load-break elbow terminations, load-break oil-immersed switch and draw-out, dry-well mounted current-limiting fuses, with primary surge arrestors.
 - 10.3.3.2 The primary feeder shall be connected to one set of bushings, and the surge arresters shall be connected to the second set of bushings.
 - 10.3.3.3 The transformer secondary compartment shall be live front with NEMA pattern spade terminations. The neutral connections shall be solidly grounded.
 - 10.3.3.4 Transformers shall be furnished with standard accessories per ANSI C57.12.26 and at least 4 taps (2 – 2.5% above and below nominal voltage).
 - 10.3.3.5 Transformer dielectric cooling fluid shall be mineral oil.
 - 10.3.3.6 Provide secondary containment for transformer oil.
 - 10.3.3.7 The transformer shall provide service to a main distribution panelboard located in the electrical room.
 - 10.3.3.8 Provide approximately 25% spare capacity (kVA) above the estimated peak demand load.
 - 10.3.3.9 Maintain separation between the outdoor transformer and the building per UFC 3-600-01, table 6-2, which is 7.6 meters (25 feet) for a transformer (less than or equal to 1000 kVA) with mineral oil fluid and a building with non-combustible construction. Maintain separation between the outdoor transformer and the mechanical equipment per UFC 3-600-01, table 6-4, which is 1.5 meters (5 feet) for a transformer (less than or equal to 1000 kVA) with mineral oil fluid.
- 10.3.4 **Equipment Pads:** Equipment pads shall be reinforced concrete, with a minimum thickness of 150 mm (6"). The pads shall have conduit windows which shall be grouted before installation of equipment. The pads shall extend 150 mm (6") beyond the equipment silhouette or footprint and shall provide both physical support for the equipment and serve a housekeeping function.
- 10.4 **Grounding:** The Contractor shall provide grounding systems that meet or exceed the requirements of the National Electrical Code (NEC). The maximum resistance to ground shall be 25 ohms.
- 10.4.1 **Fuse Terminal Ground:** The ground system at the fuse terminal shall consist of a minimum of four 19 mm x 3.1 m (3/4" x 10') copper clad steel ground rods.
 - 10.4.1.1 The ground rods shall be bonded together with # 4/0 bare copper wire.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

- 10.4.1.2 Provide a minimum of 2 connections from the primary grounding system to the fuse terminal.
 - 10.4.1.3 Bond the fuse terminal grounding system to the grounding system in the manhole, if any.
- 10.4.2 Service Transformer Ground: The grounding at the transformer shall consist of a minimum of four 19 mm x 3.1 m (3/4" x 10') copper clad steel ground rods.
 - 10.4.2.1 The ground rods shall be bonded together with # 4/0 bare copper wire.
 - 10.4.2.2 Provide a minimum of 2 connections from the primary grounding system to the transformer.
- 10.4.3 Building Service Ground: The grounding electrodes at the building service shall consist of a minimum of two 19 mm x 3.1 m (3/4" x 10') copper clad steel ground rods plus concrete encased electrodes in the building foundation bonded as required by the NEC.
 - 10.4.3.1 In addition, building steel, metal water pipes, and other components shall be bonded to the ground system as required by the NEC.
 - 10.4.3.2 The system shall have no ground loops.
 - 10.4.3.3 Grounding electrode conductors shall be copper and sized per the National Electrical Code.
- 10.4.4 Fence Grounding: Ground fences with minimum #4/0 bare copper ground cable buried along the fence. Connect each fence post to ground cable and install a ground rod every 50 m (164'), on each side of gates, and at all corners.
- 10.5 **Interior Electrical System**: The Contractor shall provide a complete interior electrical system. Overcurrent protective devices shall be coordinated such that only the device closest to a fault trips or opens. All feeders and branch circuits shall have a dedicated neutral conductor and insulated equipment grounding conductor and shall be installed in conduit, except as noted below.
 - 10.5.1 Voltage Drop: Voltage drop shall be limited to 1% on the service conductors and 5% from the building's main distribution panel to all loads, unless otherwise noted. Voltage drop calculations shall be based on estimated demand loads plus 25% future load growth.
 - 10.5.2 Service Entrance: The building shall be fed from the transformer via secondary conductors in an underground non-reinforced concrete encased duct bank with PVC conduits from sized as required by the National Electrical Code (NEC). Provide warning tape with a suitable legend above the duct bank.
 - 10.5.2.1 Provide at least 1 spare conduit, which shall be the same size as the conduits with wires, from the transformer to the electric room.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 10.5.2.2 Minimum cover for the service duct bank shall be as shown on the site plans.
- 10.5.2.3 Conductor sizes shall be calculated as required by the NEC plus 25% extra capacity to allow for future growth.
- 10.5.2.4 The service entrance conductors shall not be larger than 500 MCM. If the ampacity of the total load exceeds the ampacity of 500 MCM wire, then parallel runs of conductors shall be used. Parallel runs shall be installed as required by the National Electrical Code.
- 10.5.2.5 The Contractor shall provide current transformers and a meter capable of providing volts, amps, kWh, peak demand, and harmonic data. The meter shall also provide an output that can be read by the Building Management System. See Section 8.0 of Section 01010 for information about the Building Management System. The contractor shall connect the meter to the Building Management System.
- 10.5.2.6 The main disconnect shall be a circuit breaker. All other downstream feeder and branch circuit overcurrent protection in panelboards shall also be provided by circuit breakers.
- 10.5.2.7 Provide transient voltage surge suppression (TVSS) at the service entrance.
- 10.5.2.8 Fault and Overcurrent Protection. Line-side and load-side overcurrent and fault protection devices shall be coordinated to isolate any electrical fault from the rest of the system and for all overload conditions.
- 10.5.3 Feeders: Feeders shall be sized to supply the full demand load of the panel or load they serve, plus a minimum 25% spare capacity. Feeder overcurrent protection shall meet NEC requirements.
- 10.5.4 Stepdown Transformers: Provide a minimum of 1 dry-type stepdown transformer (480 - 120/208 volt, 3 phase, 4 wire) in the Electric Rooms on the ground and second floor of the building.
 - 10.5.4.1 Transformers shall be furnished with standard accessories and at least 4 taps (2 – 2.5% above and below nominal voltage).
 - 10.5.4.2 Transformers shall be Energy Star rated.
 - 10.5.4.3 Ground transformers as required by the NEC.
- 10.5.5 Panelboards: Panelboards shall be sized for a minimum of 125% of the demand load they serve.
 - 10.5.5.1 Panelboards shall be fully rated for the available fault current.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 10.5.5.2 Except for the main service distribution panelboard and the main 120/208 volt panelboards connected to the 480 – 120/208 volt stepdown transformers, panelboards shall be furnished with main lugs only. All panelboards shall have copper busses.
- 10.5.5.3 Full sized bolt-on branch breakers, insulated neutral busses and equipment grounding busses shall be provided.
- 10.5.5.4 Panelboards shall be recessed in finished areas and surface mounted in unfinished areas, with flush fronts and hinged doors. All panelboards shall be concealed behind doors or located in mechanical or electrical rooms. See paragraph 10.2.3 for the definition of finished spaces.
- 10.5.5.5 Panelboards shall be located near the loads they serve. See the drawings for panelboards located in corridors. The Contractor shall determine the locations of other panelboards as required to serve building loads.
- 10.5.5.6 Approximately 20% of single pole spaces shall be provided for spares (8 in a 42 space panel and 6 in a 30 space panel).
- 10.5.5.7 Circuit breakers protecting receptacle branch circuits in sleeping rooms and the sleeping room closets shall be arc-fault interrupter type.
- 10.5.5.8 Provide separate panelboards for HVAC loads. This requirement does not apply to HVAC equipment, such as bathroom exhaust fans and fan coil units, in the sleeping units.
- 10.5.6 Conductors: All conductors shall be copper, aluminum is not allowed, and not smaller than #12 AWG for power circuits.
 - 10.5.6.1 All conductors shall be stranded. Provide spade lugs or suitable adapters to connect conductors to wiring devices.
 - 10.5.6.2 All conductors shall be installed in electrical metallic tubing (EMT) where permitted by the NEC.
 - 10.5.6.3 Wire type THHN/THWN shall be used, except for service and site lighting, where type XHHW/USE shall be used.
- 10.5.7 Branch Circuits, Receptacles and Outlets: All general receptacle and lighting circuits shall be 20 ampere circuits and fed by 20 ampere circuit breakers, minimum. All wall plates shall be ivory, unbreakable nylon in finished spaces. All receptacles shall have a minimum 20 amp rating. Metal face-plates are permitted in unfinished spaces. See paragraph 10.2.3 for the definition of finished spaces.
 - 10.5.7.1 All branch circuits required by the National Electrical Code shall be provided.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 10.5.7.2 Receptacles on opposite sides of common walls shall be horizontally offset. The horizontal offset shall be a minimum of 600 mm (24 inches) in fire-rated partitions.
- 10.5.7.3 Receptacles shall be limited to 6 devices per circuit.
- 10.5.7.4 Lighting and receptacles shall be on separate branch circuits.
- 10.5.7.5 General purpose receptacles shall be provided per the NEC and as specified in subsection 11.0 of this specification section.
- 10.5.7.6 Convenience receptacles shall be NEMA 5-20R ivory, and located as specified in subsection 11.0.
- 10.5.7.7 Ground fault interrupting (GFI) receptacles shall be provided as required by the NEC and subsection 11.0.
- 10.5.7.8 Circuit breakers for permanently connected appliances, such as the range hood and cooktop, shall be capable of being locked on the open position.
- 10.5.7.9 Provide two 13 mm (1/2") spare conduits from the panelboard serving each sleeping module to the module. Spares shall terminate in separate contractor-provided outlet boxes above the suspended ceiling in the serving area a minimum of 300 mm (12") from any wall. Label the boxes as spare 120/208 volt power boxes along with panelboard number where conduit terminates.
- 10.5.7.10 Provide a circuit as required for the exterior building sign. See sheet C-2 for sign location.
- 10.5.7.11 At the Contractor's option, type MC cable may be used for branch circuits run through the ceiling concrete planks. This wiring method is allowed only for circuits at least partially provided in concrete planks. All other power branch circuits and feeders shall be provided in conduit.
- 10.5.7.12 All branch circuits that supply receptacles in the sleeping rooms shall be protected by an arc-fault circuit interrupter as required by 2002 NEC Article 210.12.
- 10.5.8 Disconnect Switch: Install a nonfused, horsepower and ampere rated, industrial rated, maintenance disconnect switch at each piece of electrical equipment. Coordinate location of disconnect switch with Contracting Officer prior to installation.
- 10.6 **Lighting:** Lighting shall be provided per Illuminating Engineering Society (IES) standards, and as specified in subsection 11.0 of this specification section. All luminaires shall be heavy commercial (specification) grade.
 - 10.6.1 Exterior Lighting: Luminaires shall be high pressure sodium, cutoff type and include shields to minimize light trespass, unless otherwise noted.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 10.6.1.1 All exterior luminaires, including those under the canopies, shall be fused.
- 10.6.1.2 Lighting shall be provided for the streets, pavilion, access road, sidewalks, and the parking areas. See drawing sheets C-7 and C-8 for approximate locations of luminaires. The actual number and locations of luminaires will be determined by the Engineer of Record.
- 10.6.1.3 Provide high pressure sodium luminaires. Average maintained illuminance shall be 10 lux (1 footcandle) on sidewalks, 5 lux (0.5 footcandle) on the access road and in parking areas, and as specified in subsection 11.0 of this specification section for the building entrance canopies and exterior of building stairs.
- 10.6.1.4 Poles for parking areas and roads shall be metal 9.2 m (30') high and shall be installed on one meter (3') high concrete pedestals. Poles for sidewalks shall be metal and approximately 4.6 m (15') high.
- 10.6.1.5 All metal poles shall be grounded to a ground rod at the pole and bonded to the equipment grounding conductor.
- 10.6.1.6 Poles and pole-mounted shoebox type luminaires shall match existing.
- 10.6.1.7 Provide photocell control via a mechanically-held magnetic lighting contactor with a hand-off-auto switch located in the electric room at each building. One photocell and one contactor may be used to control all exterior luminaires, including site lighting connected to that building's power system, exterior canopies, and wall packs.
- 10.6.1.8 All metal halide luminaires shall be pulse start type.
- 10.6.2 Interior Lighting: Provide luminaires for all rooms and interior areas, including the sleeping areas, and as specified in subsection 11.0 of this specification section.
 - 10.6.2.1 Lighting control shall be from wall-mounted switches in each room. All switches shall be ivory.
 - 10.6.2.2 Provide energy efficient lighting consisting of luminaires with T-5, T-8, or compact fluorescent lamps and electronic ballasts throughout the building.
 - 10.6.2.3 Provide occupancy sensors in the rooms specified in section 11.0. Occupancy sensors shall be dual technology type (infrared and ultrasonic or microphonic).
 - 10.6.2.4 Open-type fluorescent luminaires shall be equipped with wire guards.
- 10.6.3 Egress and Emergency Lighting: Emergency egress and exit lighting shall be provided as required by NFPA 101.
 - 10.6.3.1 Provide low profile emergency lighting units with PVC housings and self-diagnostics.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 10.6.3.2 Exit lights shall be LED type with emergency battery packs, self-diagnostics, and PVC housings.

10.7 Communications Utilities: Communications utilities include telephone, data, and cable TV.

- 10.7.1 Exterior Cable System: The Contractor shall provide 4 – 129 mm (5”) PVC conduits in a non-reinforced concrete encased duct bank from the manhole shown on the drawings to each building’s first floor communications room. The conduits are for telephone, data (fiber optic cable), cable TV (CATV), and one spare. Provide 4 - 32 mm (1.25”) innerducts in the data conduit.
 - 10.7.1.1 Minimum cover for the service duct bank shall be as shown on the site plans.
 - 10.7.1.2 Communications system installations shall not occupy the same trench as electrical power cables. These trenches shall be at least 300 mm (12 inches) apart.
 - 10.7.1.3 Provide a 200 pair telephone cable and a 12 strand single-mode fiber optic cable from the manhole to the first floor communications room. The contractor shall make all cable terminations in each building. In addition, provide a 12 strand single-mode fiber optic cable from this barracks complex to existing Building 10410 in existing spare innerduct. Provide all necessary connections and hardware.
 - 10.7.1.4 Provide a 129 mm (5”) spare conduit from the communications manhole to a point approximately 1.5 m (5’) from the manhole.
 - 10.7.1.5 Exterior CATV cables will be provided by others.
- 10.7.2 Telephone and Data Systems: Provide complete telephone and data cable systems for the building.
 - 10.7.2.1 The Contractor shall provide equipment racks, cabinets, fiber and copper patch panels, grounding equipment per subsection 11.0 of this specification section, service entrance equipment (including protectors and cross-connects), all conductors and outlets throughout the building. Voice cross connects shall be via RJ-45 patch panels. The Contractor shall make all required connections for both telephone and data (both copper and fiber) systems. Fiber optic cable shall be tested using an OTDR.
 - 10.7.2.2 The telephone and fiber optic service entrances shall be located in the first floor communications room.
 - 10.7.2.3 The Contractor shall make all final connections of the building telephone system at the main telephone cross connect and between the first and second floor Communications Rooms.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

- 10.7.2.4 Provide four 103 mm (4") conduits between the first and second floor communications rooms for CATV, telephone and data systems plus one spare. Voice risers shall be multiple 25 pair cables.
- 10.7.2.5 The Contractor shall make all final connections for both the fiber optic and copper data system cables, including patch cords, and between the first and second floor Communications Rooms. The Contractor shall furnish to the Government 5% spare patch cords for both copper and fiber cables.
- 10.7.2.6 Provide 4 pair, EIA/TIA 568B, category 6, unshielded twisted pair (UTP), #24 AWG, solid copper, plenum rated cables for both telephone and data systems. Telephone and data cables shall have different colors. Coordinate colors with the Contracting Officer.
- 10.7.2.7 All information outlets (telephone/data) shall have two jacks (dual 8-position connectors) with voice on top and data on bottom.
- 10.7.2.8 Connect all telephone/data outlets from the telephone terminal backboard and data patch panel in the communications room with two 4-pair cat 6, UTP cables (one for data and one for telephone).
- 10.7.2.9 Connect all single 8-position type wall and pay telephone outlets from the telephone terminal backboard with one 4-pair cat 6, UTP cable.
- 10.7.2.10 Flush outlets shall be provided in finished rooms. Surface mount outlets shall be provided in unfinished areas.
- 10.7.2.11 Wiring shall be homerun (star) style.
- 10.7.2.12 Provide cable trays per subsection 11.0 of this specification section for telephone, data, and cable TV cables.
- 10.7.2.13 Provide 27 mm (1") EMT from the cable tray in the corridors to the data/telephone jacks in all rooms. Provide insulating bushings at the ends of all conduits at cable tray locations.
- 10.7.2.14 Provide two 27 mm (1") spare conduits from the cable tray closest to each sleeping module to the module. Spares shall terminate above the suspended ceiling in the serving area a minimum of 300 mm (12") from any wall and 300 mm (12") from the spare power outlet boxes. Provide pull wires and cap the conduits at each end. Label the boxes as spare communications boxes.
- 10.7.2.15 Provide cable in cable tray for main horizontal cable runs. Conduit shall be provided for vertical runs or in areas subject to physical damage. All telephone and data homeruns shall be concealed in finished spaces. See paragraph 10.2.3 for the definition of finished spaces.
- 10.7.2.16 The Contractor shall terminate all outlets to patch panels and telephone punchdown blocks.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 10.7.2.17 Horizontal distribution cable terminations on the patch panels shall be terminated in an orderly, efficient, sequential arrangement, as per I3A requirements, following the outlet locations in the room.
- 10.7.2.18 Provide a dedicated telephone line for the Building Management System modem. Connect the modem to the telephone cable system.
- 10.7.3 Cable TV: The CATV installer will provide the cable from the manhole to each building in the conduit provided by the Construction Contractor to the point of demarcation in the first floor Communications Room. The Contractor shall provide all necessary CATV components in the building including, but limited to, amplifiers, splitters, directional couplers, outlet boxes, jacks, faceplates, and cables from the point of demarcation in the first floor Communications Room to each individual CATV outlet in the building. There shall individual home runs from each outlet to the junction boxes in the Communications Rooms. See paragraph 11.19.6.4.
 - 10.7.3.1 Provide cable in cable tray for main horizontal cable runs. Conduit shall be provided for vertical runs or in areas subject to physical damage. All CATV homeruns shall be concealed in finished spaces. See paragraph 10.2.3 for the definition of finished spaces.
 - 10.7.3.2 The Contractor shall provide 21 mm (3/4") conduits from the cable trays to the CATV outlets in all rooms. Provide 21 mm (3/4") conduits from the communications room to the CATV outlets at the CQ desks.
 - 10.7.3.3 Provide individual RG-6 CATV cables from the communications room backboard to each CATV outlet. Cables shall be bonded foil with tri-shield construction, 77% braid, non-bonded tape, with flame retardant PVC jacket and shall meet National Electrical Code 820 V rating. Provide connectors at the both ends of all cables.
 - 10.7.3.4 Provide flush mount boxes, jacks, adaptors, and covers for all CATV outlets. Connect the CATV cables to all outlets.
 - 10.7.3.5 Test all CATV cables by installing a 75-ohm termination and checking for open or short circuits with an ohmmeter. Replace all failed cables.
 - 10.7.3.6 All work shall meet Time Warner Cable standards.
- 10.8 **Design and Calculations Review**: The Contractor shall submit the following design and calculations:
 - 10.8.1 Load calculations and load factors, including allowance for future loads as specified above. Provide both connected and demand loads.
 - 10.8.2 Lighting calculations for each type of room, building entrances, and all lighted exterior areas.
 - 10.8.3 Short circuit calculations per IEEE standards.
 - 10.8.4 Voltage drop calculations per IEEE standards.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

SECTION 11.0 - ROOM BY ROOM REQUIREMENTS

11.1 Living/ Sleeping Rooms

- 11.1.1 Space Function: Quarters for enlisted personnel. Provide two spaces (living/ sleeping rooms) per module.
- 11.1.2 Architectural Issues: Secure private quarters, with perimeter walls of the sleeping room and adjacent closet space extending to the underside of the precast concrete plank above.
 - 11.1.2.1 Walls: Paint on CMU, extending from floor to underside of precast concrete plank.
 - 11.1.2.2 Floor: Vinyl composition tile (VCT).
 - 11.1.2.3 Ceiling: 3 m (10') high, paint underside of precast concrete plank. Use vapor retarding paint at second floor rooms.
 - 11.1.2.4 Doors: Door width as shown on plans, 2130 mm (7') high, solid core flush wood door. Painted hollow metal frame, grouted solid. Sleeping room doors to receive Heavy Duty Hardware, Three Hinges, One Mortise classroom function Lockset, with lever handles, Best cylinder, keyed distinct from all others in the building, Overhead stop, Stainless Steel Kick Plate, Peep Hole.
 - 11.1.2.5 Windows: Aluminum double hung operable window unit. Size to meet egress/rescue window requirements. Provide insect screen and window blind.
- 11.1.3 Fire Protection Issues: These areas shall receive both fire suppression sprinklers and fire detection systems.
 - 11.1.3.1 Fire Suppression Sprinklers: Sprinkler system for these spaces shall be designed per NFPA 13R. Sprinkler heads shall be the semi-recessed sidewall type. Provide the appropriate number of spaced heads as dictated by room size.
 - 11.1.3.2 Fire Detection: Provide one analog/addressable system smoke detector with a sounder base per sleeping room. Mount detector to wall according to NFPA 72 and manufacturer recommendations. Detectors shall operate as indicated in Section 7.
- 11.1.4 Mechanical – HVAC Issues: Each sleeping room shall be conditioned by an individual room fan coil units (FCUs) and heated by finned tube radiation.
 - 11.1.4.1 Zone Thermostat Type: Wall-mounted temperature sensor.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

11.1.4.2 Special Exhaust or Ventilation Requirements: Ventilation air shall be supplied to space via wall mounted supply air registers. Ventilation air shall be in accordance with ASHRAE Standard 62, latest edition. The ventilation/exhaust system shall operate continuously to provide a positive pressure within each living/sleeping module with respect to adjoining spaces.

11.1.4.3 Special Humidity Requirements: None.

11.1.4.4 Temperature Requirements:

	Normal	Setback
Heating:	20°C (68°F)	12.8°C (55°F)
Cooling:	23.9°C (75°F)	29.5°C (85°F)

11.1.4.5 Acoustical Requirements: Maximum RC (N) Mark II: 40

11.1.4.6 Special Requirements: Indoor pressurization shall be slightly positive with respect to adjacent areas.

11.1.5 Mechanical – Plumbing Issues: None.

11.1.6 Electrical Issues:

11.1.6.1 Power: Provide general purpose quadruplex receptacles on each wall, except the exterior wall. Provide a duplex receptacle in the portion of the wall between the room entry and closet doors. There shall be a minimum of 5 receptacles in each sleeping room. All sleeping rooms shall have one dedicated circuit for receptacles within the room. No point on any wall shall be more than 1.8 m (6 feet) horizontally from a receptacle. Arrangement as shown on floor plan (drawing A-1). Provide power to the fan coil units on a separate circuit. Both fan coil units in a living/sleeping module may be on one circuit.

11.1.6.2 Lighting: Provide a minimum of 2 ceiling-mounted wrap-around fluorescent luminaires, 330 lux (30 footcandles) average maintained illuminance, and a switch at the door. Luminaires in each module (two sleeping rooms, two closets, serving area, and bathroom) shall be on a dedicated circuit.

11.1.6.3 Communications: Provide two combination data/telephone outlets with one telephone and one data jack and cover. Provide category 6 cable for both telephone and data circuits from the jacks to the Communications Room on that floor. Provide 27 mm (1") EMT (4 conduits) from the corridor to each sleeping room data/telephone outlet for telephone and data circuits.

11.1.6.4 Cable TV: Provide two cable TV (CATV) outlets with jack and cover. Provide RG-6/U cable from the jack to the Communications Room on that floor. Provide 21 mm (3/4") EMT from the corridor to each sleeping room CATV outlet.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

11.2 Closet

- 11.2.1 Space Function: Secure private storage for one enlisted personnel. Provide two spaces per module.
- 11.2.2 Architectural Issues: Secure private storage, with perimeter walls of the closet extending to the underside of the precast concrete plank above.
 - 11.2.2.1 Walls: Paint on CMU.
 - 11.2.2.2 Floors: VCT.
 - 11.2.2.3 Ceiling: Minimum 2.4 m (8') high gypsum board ceiling suspended below the precast concrete plank. Use vapor retarding paint at second floor rooms.
 - 11.2.2.4 Doors: Door width as shown on plans, 2130 mm (7') high solid core flush wood door. Painted hollow metal frame, grouted solid. Closet doors to receive Heavy Duty Hardware, Three Hinges, One Mortise Classroom Function Lockset, key lock distinct from all others, with lever handles, Wall Stop, Stainless Steel Kick Plate. Undercut Door.
 - 11.2.2.5 Windows: None.
 - 11.2.2.6 Accessories: 400 mm (1'-4") deep plastic coated wire shelf with continuous heavy duty rod along one short and long wall. Robe hook on back of door.
- 11.2.3 Fire Protection Issues: These areas shall receive fire suppression sprinklers.
 - 11.2.3.1 Fire Suppression Sprinklers: Sprinkler system for these spaces shall be designed per NFPA 13R. Sprinkler heads shall be the semi-recessed pendant type. Provide the appropriate number of spaced heads as dictated by room size.
- 11.2.4 Mechanical – HVAC Issues: Inclusive of Living/Sleeping Modules.
 - 11.2.4.1 Zone Thermostat Type: None
 - 11.2.4.2 Special Exhaust or Ventilation Requirements: Transfer of ventilation air between each living/sleeping space and serving space area shall be provided via transfer air duct, above the ceilings connected to ceiling grilles 150 mm x 150 mm (6" x 6") located at closet ceiling and wall at serving area.
 - 11.2.4.3 Special Humidity Requirements: None
 - 11.2.4.4 Temperature Requirements: None
- 11.2.5 Mechanical – Plumbing Issues: None.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

11.2.6 Electrical Issues:

- 11.2.6.1 Power: Provide one duplex receptacle on the same circuit as the sleeping room receptacles.
- 11.2.6.2 Lighting: Provide recessed fluorescent luminaire, 110 lux (10 footcandles) average maintained illuminance, and a switch at the closet door.
- 11.2.6.3 Communications: None.
- 11.2.6.4 Cable TV: None.

11.3 Serving Area

- 11.3.1 Space Function: Kitchenette space for a maximum of two enlisted personnel. Provide one space per module.

11.3.2 Architectural Issues:

- 11.3.2.1 Walls: Paint on CMU.
- 11.3.2.2 Floors: VCT.
- 11.3.2.3 Ceiling: Min. 2.4 m (8') high, painted gypsum board.
- 11.3.2.4 Doors: Door width 900 mm (3') x 2130 mm (7') high solid core flush wood door. Painted hollow metal frame U/L Fire Rated, grouted solid. Entry door to receive Heavy Duty Hardware, Three Hinges, One Mortise Hotel/Motel F15 function Lockset, with lever handles, Best cylinder, keyed distinct from all others in the building, Door Closer, Wall Stop, Stainless Steel Kick Plate, Peep Hole.
- 11.3.2.5 Windows: None.
- 11.3.2.6 Accessories: Min. 1.5 m (5') long plastic laminate base and wall cabinets, with kitchen sink, and microwave shelf. Provide space and electrical accommodations for government supplied microwave, undercounter refrigerator. Contractor to provide 2 burner electric cooktop and ducted range hood exhaust system as specified.

- 11.3.3 Fire Protection Issues: These areas shall receive both fire suppression sprinklers and fire detection systems.

- 11.3.3.1 Fire Suppression Sprinklers: Sprinkler system for these spaces shall be designed per NFPA 13R. Sprinkler heads shall be the semi-recessed pendent type. Provide the appropriate number of spaced heads as dictated by room size.
- 11.3.3.2 Fire Detection: Provide one analog/addressable system smoke detector with a sounder base per serving area. Mount detector to ceiling according to NFPA 72 and manufacturer recommendations. Detectors shall operate as indicated in Section 7.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

11.3.4 Mechanical – HVAC Issues: Inclusive of Living/Sleeping Modules.

11.3.4.1 Zone Thermostat Type: None

11.3.4.2 Special Exhaust or Ventilation Requirements: Continuous ventilation of outside air supplied to adjoining living/sleeping spaces within module (no recirculation). General exhaust through ceiling register in serving area. Kitchen exhaust hoods for cooktops exhausted from space via transfer air duct, above the ceilings, 25 L/s (50 cfm).

11.3.4.3 Special Humidity Requirements: None

11.3.4.4 Temperature Requirements: None

11.3.5 Mechanical – Plumbing Issues: Provide sanitary drain, vent, cold and hot water connections for kitchen sink.

11.3.6 Electrical Issues:

11.3.6.1 Power: Provide power as follows:

- a. General purpose receptacles: one in the passageway to the sleeping rooms and one GFCI receptacle in the wall in the serving area, as shown on the architectural drawings, **in addition to** the receptacles for appliances (see paragraph 11.3.6.1 c for the refrigerator and 11.4.6.1 for the lavatory receptacles). These receptacles shall be on a dedicated circuit (both receptacles plus the refrigerator receptacle specified in paragraph 11.3.6.1 c on one circuit).
- b. 3 quadruplex receptacles above the counter as shown on the architectural drawings. Provide 2 circuits for these receptacles: one circuit for the two receptacles on either side of the cooktop and a dedicated circuit for the other receptacle above the counter.
- c. Provide a receptacle for the refrigerator. This receptacle may be on the same circuit as general-purpose receptacles specified in paragraph 11.3.6.1 a.
- d. Provide power to the cooktop and range hood and over the counter microwave oven. Separate 120 volt, 20 amp circuits are required for each piece of equipment (2 circuits total: one for the cooktop and the other for the range hood and microwave oven). See paragraph 10.5.7.8.

11.3.6.2 Lighting: Provide lighting as follows:

- a. Ceiling-mounted 600 mm x 600 mm (2' x 2') recessed fluorescent luminaires for general illumination, 540 lux (50 footcandles) average maintained illuminance, and 3-way switches at the module entry door and near the doors to the sleeping rooms.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- b. A 600 mm x 600 mm (2' x 2') recessed fluorescent luminaire, supplemented by fluorescent task lights above the counter between the sink and cooktop and between the sink and refrigerator, 540 lux (50 footcandles) average maintained illuminance, and separate switches for the ceiling-mounted luminaire and task lights.

11.3.6.3 Communications: None.

11.3.6.4 Cable TV: None.

11.4 Bathroom

11.4.1 Space Function: Toilet and bath facilities for a maximum of two enlisted personnel. Provide one space per module.

11.4.2 Architectural Issues: Handicapped accessibility not required.

11.4.2.1 Walls: Paint on CMU. Ceramic tile base.

11.4.2.2 Floors: Ceramic tile. Install base prior to flooring.

11.4.2.3 Ceilings: 2.4 m (8') high, painted gypsum board.

11.4.2.4 Doors: Door width 700 mm wide x 2130 mm high (2'-4" x 7'-0") solid core flush wood door. Painted hollow metal frame, grouted solid. Bathroom door to receive Heavy Duty Hardware, Three Hinges, One Mortise Privacy Lockset, with lever handles, Wall Stop L12011.

11.4.2.5 Windows: None

11.4.2.6 Accessories: Provide toilet accessories as specified in Section 5.0 - Architectural.

11.4.2.7 Equipment: Floor mounted flush valve water closet, plastic laminate base cabinet, solid surfacing countertop, integral lavatory sink, one-piece combination shower/ tub unit.

11.4.3 Fire Protection Issues: These areas shall receive fire suppression sprinklers.

11.4.3.1 Fire Suppression Sprinklers: Sprinkler system for these spaces shall be designed per NFPA 13R. Sprinkler heads shall be the semi-recessed pendent type. Provide the appropriate number of spaced heads as dictated by room size.

11.4.4 Mechanical – HVAC Issues: Inclusive of Living/Sleeping Modules.

11.4.4.1 Zone Thermostat Type: None

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

- 11.4.4.2 Special Exhaust or Ventilation Requirements: Continuous ventilation of outside air supplied to adjoining living/sleeping spaces within module (no recirculation). Designed to maintain negative pressure.
- 11.4.4.3 Special Humidity Requirements: None
- 11.4.4.4 Temperature Requirements: None
- 11.4.5 Mechanical – Plumbing Issues: Provide sanitary drain, vent, cold and hot water connections for water closet, lavatory and bathtub/shower unit.
- 11.4.6 Electrical Issues:
 - 11.4.6.1 Power: Provide power for the bathroom exhaust fan. Provide two GFI receptacles next to and above the lavatory counter as shown on the architectural drawings. These receptacles shall be on the same circuit as the general purpose receptacles specified above (paragraph 11.3.6.1 a).
 - 11.4.6.2 Lighting: Provide a 600 mm x 600 mm (2' x 2') recessed fluorescent luminaire(s), 220 lux (20 footcandles) average maintained illuminance, and a switch at the outside of the door. The ceiling luminaire(s) shall be suitable for wet locations. Provide supplemental fluorescent task lighting for the lavatory, which shall be suitable for damp locations.
 - 11.4.6.3 Communications: None.
 - 11.4.6.4 Cable TV: None.
- 11.5 Entry Vestibule
 - 11.5.1 Space Function: Building entrance. Provide two spaces on ground floor.
 - 11.5.2 Architectural Issues:
 - 11.5.2.1 Walls: Brick or paint on CMU.
 - 11.5.2.2 Floors: Quarry tile with recessed walk-off mat.
 - 11.5.2.3 Ceilings: Painted gypsum board.
 - 11.5.2.4 Doors: Pair of doors 900 mm wide x 2130 mm high (3'-0" x 7'-0") FRP, ¾ glass, with Aluminum frames. Each opening to receive Heavy Duty Hardware, Two Continuous Hinge, Rim Vertical Rod Classroom Panic Device, with lever handles, Best cylinder, keyed distinct from all others in the building, Door Closer, Over Head Stop/Holder, Stainless Steel Kick Plate, One Threshold with Pem-Kote finish x sleeve bolt fasteners, One Set Weather Stripping, Astragal, Two Sweeps.
 - 11.5.2.5 Windows: Insulated glazing panels of laminated glass.
 - 11.5.2.6 Accessories: Walk-off mat.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

11.5.3 Fire Protection Issues: These areas shall receive both fire suppression sprinklers and fire alarm control equipment.

11.5.3.1 Fire Suppression Sprinklers: Sprinkler system for this space shall be designed per NFPA 13. Sprinkler heads shall be the semi-recessed pendent type. Provide the appropriate number of spaced heads as dictated by room size.

11.5.3.2 Fire Alarm Control: A fire alarm annunciator panel shall be recessed wall mounted in the north entry vestibule.

11.5.4 Mechanical – HVAC Issues: This area requires only perimeter heat.

11.5.4.1 Zone Thermostat Type: Wall mounted temperature sensor

11.5.4.2 Special Exhaust or Ventilation Requirements: None

11.5.4.3 Special Humidity Requirements: None

11.5.4.4 Temperature Requirements:

	Normal	Setback
Heating:	7.5°C (45.5°F)	7.5°C (45.5°F)
Cooling:	None	None

11.5.5 Mechanical – Plumbing Issues: Provide floor drain with trap primer below recessed mat.

11.5.6 Electrical Issues:

11.5.6.1 Power: None.

11.5.6.2 Lighting: Provide a recessed, ceiling-mounted fluorescent luminaire(s), inside the vestibule, 110 lux (10 footcandles) average maintained illuminance, and a switch inside the vestibule near the exterior door.

11.5.6.3 Communications: None.

11.5.6.4 Cable TV: None.

11.6 Entry Lobby

11.6.1 Space Function: Building lobby and CQ desk. Provide one space per floor.

11.6.2 Architectural Issues:

11.6.2.1 Walls: Paint on CMU.

11.6.2.2 Floors: VCT.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

- 11.6.2.3 Ceilings: 2.4 m (8') high SACT.
- 11.6.2.4 Doors: Pair of doors 900 mm wide x 2130 mm high (3'-0" x 7'-0") FRP, ¾ glass, with Aluminum frames. Each opening to receive Heavy Duty Hardware, Two Continuous Hinge, Rim Vertical Rod Classroom Panic Device, with lever handles, Best cylinder, keyed distinct from all others in the building, Door Closer, Over Head Stop/Holder, Stainless Steel Kick Plate, One Threshold with Pem-Kote finish x sleeve bolt fasteners, One Set Weather Stripping, Astragal, Two Sweeps.
- 11.6.2.5 Windows: As shown on exterior elevations.
- 11.6.2.6 Accessories: CQ desk of plastic laminate. Center desk on both building corridors. Chair by government. Fire extinguisher and fire extinguisher cabinet.
- 11.6.3 Fire Protection Issues: This area shall receive both fire suppression sprinklers and fire alarm notification appliances.
- 11.6.3.1 Fire Suppression Sprinklers: Sprinkler system for this space shall be designed per NFPA 13. Sprinkler heads shall be the semi-recessed pendent type. Provide the appropriate number of spaced heads as dictated by room size.
- 11.6.3.2 Fire Notification: Fire alarm notification appliances shall be located in this space per NFPA 72.
- 11.6.4 Mechanical – HVAC Issues:
- 11.6.4.1 Zone Thermostat Type: Wall-mounted temperature sensor.
- 11.6.4.2 Special Exhaust or Ventilation Requirements: Compliance with ASHRAE 62. Overhead air supply. Return inlets at 160 mm (6.3") above finished floor.
- 11.6.4.3 Special Humidity Requirements: None.
- 11.6.4.4 Temperature Requirements:
- | | | |
|----------|----------------|---------------|
| | Normal | Setback |
| Heating: | 20°C (68°F) | 12.8°C (55°F) |
| Cooling: | 23.9°C (75°F)/ | 29.5°C (85°F) |
- 11.6.5 Mechanical – Plumbing Issues: Provide sanitary drain, vent, cold water connections for electric water cooler.
- 11.6.6 Electrical Issues:
- 11.6.6.1 Power: Provide power as follows:

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- a. General purpose receptacles on each wall of the lobbies. No point on any wall shall be more than 6 m (20 feet) from a receptacle.
- b. Provide 2 duplex receptacles in the CQ desk in both lobbies. A dedicated circuit shall be provided at each CQ desk. Coordinate installation with furniture provider.
- c. Provide a receptacle on a dedicated circuit for the electric water cooler.

11.6.6.2 Lighting: Provide lighting as follows:

- a. Recessed troffer fluorescent luminaires, 160 lux (15 footcandles) average maintained illuminance in the general lobby areas and 540 lux (50 footcandles) at the CQ desk.
- b. Provide 3-way switches at both exterior entries to the Ground Floor Lobby. Provide 3-way switches on the Lobby side of the corridor doors for the Second Floor Lobby.
- c. One unswitched night light in each Lobby.
- d. Exit and emergency lighting as required by the Life Safety Code.

11.6.6.3 Communications: Provide one combination data/telephone outlet with one telephone and one data jack in the CQ Desk in both lobbies. Provide category 6 cable for both telephone and data circuits from the jacks to the Communications Room on that floor. See paragraph 11.19.6.3 for cable tray requirements. Provide 27 mm (1") EMT to each data/telephone outlet for telephone and data circuits. Coordinate installation with furniture provider.

11.6.6.4 Cable TV: Provide one cable TV outlet with jack in the CQ Desk in both lobbies. Provide RG-6 cable in conduit from the jack to the Communications Room on that floor. Coordinate installation with furniture provider.

11.7 **Building Corridors**

11.7.1 Space Function: Building circulation. Provide two spaces per floor.

11.7.2 Architectural Issues: Fire rating as required for bearing walls, minimum 1 hour.

11.7.2.1 Minimum Size: 1.750 m (5'-9") wide.

11.7.2.2 Walls: Paint on CMU.

11.7.2.3 Floors: VCT.

11.7.2.4 Ceilings: 2.4 m (8') high SACT.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

- 11.7.2.5 Doors: Pair of 850 mm wide x 2130 mm high (2'-8" x 7'-0") painted flush hollow metal doors and frames. 125 mm x 500 mm (5" x 1'-8") vision panels. C label fire doors. Each opening to receive Heavy Duty Hardware, Two Continuous Hinge, Push Plate, Pull Plate, Door Closer, Wall Magnetic Hold Open, Stainless Steel Kick Plate.
- 11.7.2.6 Windows: None.
- 11.7.2.7 Accessories: Fire extinguisher and fire extinguisher cabinets.
- 11.7.3 Fire Protection Issues: These areas shall receive fire suppression sprinklers, fire alarm notification appliances, manual fire alarm pull stations, and magnetic door holders.
- 11.7.3.1 Fire Suppression Sprinklers: Sprinkler system for these spaces shall be designed per NFPA 13. Sprinkler heads shall be the semi-recessed pendent type. Provide the appropriate number of spaced heads as dictated by area size.
- 11.7.3.2 Fire Notification: Fire alarm notification appliances shall be located in these spaces per NFPA 72.
- 11.7.3.3 Fire Manual Release: Manual fire alarm pull stations shall be located directly adjacent to all exits from a floor. Manual fire alarm pull stations shall be equipped with protective covers as indicated in Section 7.
- 11.7.3.4 Magnetic Door Holders: The double doors leading from each floor's entry lobby to the wing corridors shall be equipped with magnetic door holders to keep the doors propped open under normal operating conditions.
- 11.7.4 Mechanical – HVAC Issues: Interior corridors heated via convectors.
- 11.7.4.1 Zone Thermostat Type: Wall-mounted temperature sensor.
- 11.7.4.2 Special Exhaust or Ventilation Requirements: Exhaust shall comply with ASHRAE 62.
- 11.7.4.3 Special Humidity Requirements: None.
- 11.7.4.4 Temperature Requirements:
- | | | |
|----------|-------------|---------------|
| | Normal | Setback |
| Heating: | 20°C (68°F) | 12.8°C (55°F) |
| Cooling: | N/A | N/A |
- 11.7.5 Mechanical – Plumbing Issues: None.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

11.7.6 Electrical Issues:

11.7.6.1 Power: Provide general purpose receptacles on at least one wall of all corridors. No point on any wall shall be more than 6 m (20 feet) from a receptacle.

11.7.6.2 Lighting: Provide lighting as follows:

- a. Recessed 600 mm x 600 mm (2' x 2') troffer fluorescent luminaires, 160 lux (15 footcandles) average maintained illuminance.
- b. Provide 3-way switches at both entries to each corridor.
- c. Two unswitched night lights in each corridor.
- d. Exit and emergency lighting as required by the Life Safety Code.

11.7.6.3 Communications: See paragraph 11.19.6.3 for cable tray requirements.

11.7.6.4 Cable TV: None.

11.8 Vending Area

11.8.1 Space Function: Vending machines. Provide one vending area at ground floor only.

11.8.2 Architectural Issues:

11.8.2.1 Minimum Size: Size to accommodate min. 5 machines.

11.8.2.2 Walls: Paint on CMU.

11.8.2.3 Floors: VCT.

11.8.2.4 Ceilings: 2.4 m (8') high SACT.

11.8.2.5 Doors: None.

11.8.2.6 Windows: None.

11.8.2.7 Furniture: Vending machines supplied and installed by the government. Contractor to provide electrical and plumbing services as specified.

11.8.3 Fire Protection Issues: This area shall receive fire suppression sprinklers.

11.8.3.1 Fire Suppression Sprinklers: Sprinkler system for this space shall be designed per NFPA 13. Sprinkler heads shall be the semi-recessed pendent type. Provide the appropriate number of spaced heads as dictated by area size.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

11.8.4 Mechanical – HVAC Issues:

11.8.4.1 Zone Thermostat Type: None.

11.8.4.2 Special Exhaust or Ventilation Requirements: None.

11.8.4.3 Special Humidity Requirements: None.

11.8.4.4 Temperature Requirements: None.

11.8.5 Mechanical – Plumbing Issues: Provide floor drain with trap primer and cold water valved outlet in vicinity of Ice Machine.

11.8.6 Electrical Issues:

11.8.6.1 Power: Provide a duplex receptacle on a dedicated circuit for each vending machine.

11.8.6.2 Lighting: None. Light shall be provided from the Lobby luminaires.

11.8.6.3 Communications: None.

11.8.6.4 Cable TV: None.

11.9 **Central Stair**

11.9.1 Space Function: Vertical circulation. Provide one space per floor.

11.9.2 Architectural Issues: No enclosure. Provide smoke draft stops extending from ceiling to code required minimum distance below ceiling to prevent smoke transfer. Slope of stair shall be comfortable for soldiers in full gear and/or moving furniture in and out (Riser times Tread = 75 inches +/-).

11.9.2.1 Minimum Size: Min. 1.5 m (5') wide.

11.9.2.2 Walls: Paint on CMU.

11.9.2.3 Floors: VCT at landings, abrasive tread inserts at stairs.

11.9.2.4 Ceilings: Painted exposed structure.

11.9.2.5 Doors: None.

11.9.2.6 Windows: Exterior windows as shown on elevations.

11.9.2.7 Accessories: None.

11.9.2.8 Railings: Painted steel pipe rails in conformance with NFPA 101.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

11.9.3 Fire Protection Issues: This area shall receive fire suppression sprinklers and Class I standpipe connections on each floor.

11.9.3.1 Fire Suppression Sprinklers: Sprinkler system for this space shall be designed per NFPA 13. Sprinkler heads shall be the semi-recessed pendent or sidewall type. Provide the appropriate number of spaced heads as dictated by area size.

11.9.3.2 Class I Standpipe: Class I standpipe system connections shall be provided on each floor on the stairwell. Standpipe system to be connected to building fire suppression sprinkler system as indicated in Section 7.

11.9.4 Mechanical – HVAC Issues:

11.9.4.1 Zone Thermostat Type: Wall-mounted temperature sensor.

11.9.4.2 Special Exhaust or Ventilation Requirements: None.

11.9.4.3 Special Humidity Requirements: None.

11.9.4.4 Temperature Requirements:

	Normal	Setback
Heating:	20°C (68°F)	12.8°C (55°F)
Cooling:	N/A	N/A

11.9.5 Mechanical – Plumbing Issues: None.

11.9.6 Electrical Issues:

11.9.6.1 Power: None.

11.9.6.2 Lighting: Provide unswitched pendant or ceiling-mounted architectural fluorescent luminaire(s), 220 lux (20 footcandles) average maintained illuminance. Industrial type luminaires are not acceptable. Provide emergency lights as required by the Life Safety Code.

11.9.6.3 Communications: None.

11.9.6.4 Cable TV: None.

11.10 Building Stairs

11.10.1 Space Function: Emergency egress and vertical circulation. Provide two spaces per floor.

11.10.2 Architectural Issues:

11.10.2.1 Minimum Size: 1.1 m (3'-8") wide.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 11.10.2.2 Walls: Paint on CMU.
- 11.10.2.3 Floors: VCT at landings, abrasive tread inserts on stairs.
- 11.10.2.4 Ceilings: Painted exposed structure.
- 11.10.2.5 Interior Doors: Door width of 900 mm x 2130 mm high (3'-0" x 7'-0") painted hollow metal doors and frames U/L Fire Rated. 125 mm x 500 mm (5" x 1'-8") vision panels. Each door to receive Heavy Duty Hardware, One Continuous Hinge, Rim Panic Passage Function, Door Closer, Stainless Steel Kick Plate.
- 11.10.2.6 Exterior Doors: Exterior door 900 mm wide, x 2130 mm high (3'-0" x 7'-0") insulated FRP doors x Aluminum Frame. Each opening to receive Heavy Duty Hardware, One Continuous Hinges, Rim Panic Night Latch (for fire department access) Function, Door Closer, Over Head Stop/Holder, Threshold x Pem-Kote x Sleeve Anchors, Set Weather Stripping, Sweep.
- 11.10.2.7 Windows: Laminated glass vision panel in door.
- 11.10.2.8 Accessories: None.
- 11.10.2.9 Railings: Painted steel pipe rails in conformance with NFPA 101.
- 11.10.3 Fire Protection Issues: These areas shall receive fire suppression sprinklers and Class I standpipe connections on each floor.
 - 11.10.3.1 Fire Suppression Sprinklers: Sprinkler system for these spaces shall be designed per NFPA 13. Sprinkler heads shall be the semi-recessed pendent or sidewall type. Provide the appropriate number of spaced heads as dictated by area size.
 - 11.10.3.2 Class I Standpipe: Class I standpipe system connections shall be provided on each floor on the interior of the stairwells. Standpipe system to be connected to building fire suppression sprinkler system as indicated in Section 7.
- 11.10.4 Mechanical – HVAC Issues:
 - 11.10.4.1 Zone Thermostat Type: Wall-mounted temperature sensor.
 - 11.10.4.2 Special Exhaust or Ventilation Requirements: None.
 - 11.10.4.3 Special Humidity Requirements: None.
 - 11.10.4.4 Temperature Requirements:

	Normal	Setback
Heating:	20°C (68°F)	12.8°C (55°F)
Cooling:	N/A	N/A

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

11.10.5 Mechanical – Plumbing Issues: None.

11.10.6 Electrical Issues:

11.10.6.1 Power: Provide a GFI receptacle in a weather-proof box on the outside of the exterior wall in a suitable location near the both stairway entries to the building. Provide a cover that remains weather-tight with a plug in the receptacle.

11.10.6.2 Lighting: Provide unswitched wall, pendant, or ceiling-mounted architectural fluorescent luminaire(s), 220 lux (20 footcandles) average maintained illuminance inside the stairwells. Industrial type luminaires are not acceptable.

a. Provide emergency lights as required by the Life Safety Code.

b. Provide high pressure sodium wall-pack luminaires on the exterior wall above the exterior doors, 20 lux (2 footcandles) average maintained illuminance within 3 m (10 feet) of the doors.

c. Exterior luminaires shall be controlled by a photocell and mechanically-held magnetic contactor with a hand-off-auto switch. See paragraph 11.22.6.2.

11.10.6.3 Communications: None.

11.10.6.4 Cable TV: None.

11.11 Phone Booth Alcove

11.11.1 Space Function: Public phone access. Provide one space per floor, 2 phones per space.

11.11.2 Architectural Issues: Handicapped accessible phone booths at ground floor only.

11.11.2.1 Walls: Paint on CMU.

11.11.2.2 Floors: VCT.

11.11.2.3 Ceilings: 2.4 m (8') high SACT.

11.11.2.4 Doors: None.

11.11.2.5 Windows: None.

11.11.2.6 Accessories: None.

11.11.3 Fire Protection Issues: This area shall receive fire suppression sprinklers.

11.11.3.1 Fire Suppression Sprinklers: Sprinkler system for this space shall be designed per NFPA 13. Sprinkler heads shall be the semi-recessed pendent type. Provide the appropriate number of spaced heads as dictated by area size.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

11.11.4 Mechanical – HVAC Issues:

11.11.4.1 Zone Thermostat Type: None. Included in Lobby.

11.11.5 Mechanical – Plumbing Issues: None.

11.11.6 Electrical Issues:

11.11.6.1 Power: None.

11.11.6.2 Lighting: None. Light shall be provided from the Lobby luminaires.

11.11.6.3 Communications: Provide telephone outlets with jacks and covers for 2 pay telephones on each floor (4 total). Provide separate category 6 cables in 21 mm (3/4") EMT for each telephone circuit from the jacks to the Communications Room on that floor.

11.11.6.4 Cable TV: None.

11.12 **Mud Room**

11.12.1 Space Function: Boot wash and equipment cleaning room. Provide one room at ground floor only.

11.12.2 Architectural Issues: Must be adjacent to the ground floor laundry, with direct access from the entry vestibule.

11.12.2.1 Walls: Paint on CMU.

11.12.2.2 Floors: Non-skid epoxy floor system. Slope floor to grates.

11.12.2.3 Ceilings: Min. 2.4 m (8') high gypsum board.

11.12.2.4 Doors: Door width of 900 mm x 2130 mm high (3'-0" x 7'-0") painted FRP door and Hollow Metal frames U/L Fire Rated. 125 mm x 500 mm (5" x 1'-8") vision panels. Each door to receive Heavy Duty Hardware, One Continuous Hinge, Mortise Lockset Passage Function, Door Closer, Wall Stop, Stainless Steel Kick Plate.

11.12.2.5 Windows: As shown on elevations.

11.12.2.6 Furniture: None.

11.12.2.7 Equipment: Provide three combination separator drains, set flush to adjacent concrete flooring. Wall mounted hose bib with mixing valve for warm water wash of equipment and footgear. Min. of three floor-mounted utility sinks.

11.12.3 Fire Protection Issues: This area shall receive fire suppression sprinklers.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

11.12.3.1 Fire Suppression Sprinklers: Sprinkler system for this space shall be designed per NFPA 13. Sprinkler heads shall be the semi-recessed pendent type. Provide the appropriate number of spaced heads as dictated by room size.

11.12.4 Mechanical – HVAC Issues:

11.12.4.1 Zone Thermostat Type: Wall-mounted temperature sensor.

11.12.4.2 Special Exhaust or Ventilation Requirements: Ventilation with tempered outside air via AHU-3. On/off control of makeup and exhaust via switch mounted outside of space. Use (10) minute to (1) hour timer via DDC System. Use (2) position dampers for control of makeup and exhaust air. Maintain minimum of (10) air changes per hour.

11.12.4.3 Special Humidity Requirements: None

11.12.4.4 Temperature Requirements:

	Occupied	Nighttime
Heating:	20°C (68°F)	12.8°C (55°F)
Cooling:	N/A	N/A

11.12.5 Mechanical – Plumbing Issues: Provide sanitary drain, vent, hot and cold water connections for separator drains, hose bibs and utility sinks.

11.12.6 Electrical Issues:

11.12.6.1 Power: Provide one GFI receptacle in a weather-proof box. Provide a cover that remains weather-tight with a plug in the receptacle.

11.12.6.2 Lighting: Provide recessed fluorescent luminaires, 330 lux (30 footcandles) average maintained illuminance, and a switch at the outside of the door into the room from the Lobby. The luminaires shall be suitable for wet locations.

11.12.6.3 Communications: None.

11.12.6.4 Cable TV: None.

11.13 Laundry

11.13.1 Space Function: Laundry facilities for use by Barracks personnel. Provide one per floor.

11.13.2 Architectural Issues:

11.13.2.1 Walls: Paint on CMU.

11.13.2.2 Floors: VCT.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 11.13.2.3 Ceilings: 2.4 m (8') high SACT.
- 11.13.2.4 Doors: Door width of 900 mm x 2130 mm (3'-0" x 7'-0") Solid Core Wood door and Hollow Metal frames U/L Fire Rated. 125 mm x 500 mm (5" x 1'8") vision panels. Each door to receive Heavy Duty Hardware, One Continuous Hinge, Mortise Lockset Passage Function, Door Closer, Wall Stop, Stainless Steel Kick Plate.
- 11.13.2.5 Windows: Exterior windows as shown on elevations.
- 11.13.2.6 Furniture: Washers and dryers supplied and installed by the government.
- 11.13.2.7 Accessories: Provide built in plastic laminate tops for use as folding tables.
- 11.13.3 Fire Protection Issues: These areas shall receive fire suppression sprinklers, combustible gas detection, carbon monoxide gas detection, and respective gas detection notification appliances.
- 11.13.3.1 Fire Suppression Sprinklers: Sprinkler system for these spaces shall be designed per NFPA 13. Sprinkler heads shall be the semi-recessed pendent type. Provide the appropriate number of spaced heads as dictated by room size.
- 11.13.3.2 Gas Detection: Provide one combustible gas detector with notification appliance and one carbon monoxide detector with notification appliance in each laundry room as indicated in Section 7.
- 11.13.4 Mechanical – HVAC Issues:
- 11.13.4.1 Zone Thermostat Type: Wall-mounted temperature sensor.
- 11.13.4.2 Special Exhaust or Ventilation Requirements: Tempered makeup air.
- 11.13.4.3 Special Humidity Requirements: None.
- 11.13.4.4 Temperature Requirements:
- | | | |
|----------|------------------------|---------------|
| | Occupied | Nighttime |
| Heating: | 20°C (68°F) | 12.8°C (55°F) |
| | 29°C (85°F) high limit | |
| Cooling: | N/A | N/A |
- 11.13.4.5 Provide dryer vent system designed in accordance with TM 5-810-1 and TM 5-815-3.
- 11.13.4.6 Provide gas piping for dryers.
- 11.13.5 Mechanical – Plumbing Issues: Provide washer boxes including sanitary drain, vent, hot and cold water connections. Provide floor drain with trap primer.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

11.13.6 Electrical Issues:

- 11.13.6.1 Power: Provide one duplex receptacle on a dedicated 120 volt, 20 amp circuit for each washer and dryer. The dryers are gas type. In addition, provide one general purpose GFCI receptacle.
- 11.13.6.2 Lighting: Provide recessed troffer fluorescent luminaires, 330 lux (30 footcandles) average maintained illuminance, and a switch at the inside of the door into the room from the Lobby. Provide occupancy sensors.
- 11.13.6.3 Communications: None.
- 11.13.6.4 Cable TV: None.

11.14 **Toilet Room**

- 11.14.1 Space Function: Public unisex toilet facilities. Provide one space per floor.
- 11.14.2 Architectural Issues: Ground floor toilet room only required to be handicapped accessible.
 - 11.14.2.1 Walls: Ceramic tile wainscot to min. 1.5 m (5') high, with painted CMU walls above.
 - 11.14.2.2 Floors: Ceramic tile floor and cove base. Install base prior to flooring.
 - 11.14.2.3 Ceilings: 2.4 m (8') high SACT or painted gypsum board.
 - 11.14.2.4 Doors: Door width of 900 mm x 2130 mm (3'-0" x 7'-0") Solid Core Wood door and Hollow Metal frames grouted solid. Each door to receive Heavy Duty Hardware, Three Hinges, One Mortise Lockset Privacy Function, Door Closer, Wall Stop, Stainless Steel Kick Plate.
 - 11.14.2.5 Windows: None.
 - 11.14.2.6 Accessories: Toilet accessories as specified in Section 5.0 - Architectural.
 - 11.14.2.7 Equipment: Floor mounted flush valve water closet and wall hung lavatory.
- 11.14.3 Fire Protection Issues: This area shall receive both fire suppression sprinklers and fire alarm notification appliances.
 - 11.14.3.1 Fire Suppression Sprinklers: Sprinkler system for this space shall be designed per NFPA 13. Sprinkler heads shall be the semi-recessed pendent type. Provide the appropriate number of spaced heads as dictated by room size.
 - 11.14.3.2 Fire Notification: A fire alarm visual notification appliance shall be located in this space per NFPA 72 and Federal Accessibility Standards.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

11.14.4 Mechanical – HVAC Issues: None.

11.14.4.1 Zone Thermostat Type: Wall-mounted temperature sensor.

11.14.4.2 Special Exhaust or Ventilation Requirements: No return air from this room. Exhaust shall comply with ASHRAE 62. Overhead air.

11.14.4.3 Special Humidity Requirements: None.

11.14.4.4 Temperature Requirements:

	Normal	Setback
Heating:	20°C (68°F)	12.8°C (55°F)
Cooling:	None	None

11.14.5 Mechanical – Plumbing Issues: Provide sanitary drain, vent, hot and cold water connections for watercloset and lavatory.

11.14.6 Electrical Issues:

11.14.6.1 Power: Provide power for the exhaust fan. This fan shall be connected to the lighting circuit in the room. Provide a separate switch for the fan. Label the fan and light switches. Provide one GFI receptacle near the lavatory.

11.14.6.2 Lighting: Provide a recessed 600 mm x 600 mm (2' x 2') troffer fluorescent if a SACT is provided or a 600 mm x 600 mm (2' x 2') recessed fluorescent luminaire(s) if a gypsum board ceiling is provided, 220 lux (20 footcandles) average maintained illuminance, and a switch. Provide occupancy sensor.

11.14.6.3 Communications: None.

11.14.6.4 Cable TV: None.

11.15 **Janitor's Closet**

11.15.1 Space Function: Provide one space per floor.

11.15.2 Architectural Issues:

11.15.2.1 Walls: Paint on CMU.

11.15.2.2 Floors: Sealed concrete.

11.15.2.3 Ceilings: Painted concrete plank.

11.15.2.4 Doors:

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

- a. Ground Floor: Door width of 900 mm x 2130 mm (3'-0" x 7'-0") hollow metal flush door and Hollow Metal frame grouted solid. Each door to receive Heavy Duty Hardware, Three Hinges, One Mortise Lockset Storeroom Function, Best cylinder, keyed distinct from all others in the building, Door Closer, Wall Stop, Stainless Steel Kick Plate. Undercut.
- b. Second Floor: Door width of 900 mm x 2130 mm (3'-0" x 7'-0") Solid Core Wood door and Hollow Metal frame grouted solid. Each door to receive Heavy Duty Hardware, Three Hinges, One Mortise Lockset Storeroom Function, Best cylinder, keyed distinct from all others in the building, Door Closer, Wall Stop, Stainless Steel Kick Plate. Undercut.

11.15.2.5 Windows: None.

11.15.2.6 Furniture: None.

11.15.2.7 Equipment: Floor mounted service sink.

11.15.3 Fire Protection Issues: This area shall receive fire suppression sprinklers.

11.15.3.1 Fire Suppression Sprinklers: Sprinkler system for this space shall be designed per NFPA 13. Sprinkler heads shall be the semi-recessed pendent type. Provide the appropriate number of spaced heads as dictated by room size.

11.15.4 Mechanical – HVAC Issues: This area requires only exhaust, 25 L/S (50 cfm).

11.15.4.1 Zone Thermostat Type: None

11.15.4.2 Special Exhaust or Ventilation Requirements: Compliance with ASHRAE 62. Exhaust inlet at ceiling.

11.15.4.3 Special Humidity Requirements: None

11.15.4.4 Temperature Requirements: None

11.15.5 Mechanical – Plumbing Issues: Provide sanitary drain, vent, hot and cold water connections for service sink.

11.15.6 Electrical Issues:

11.15.6.1 Power: None.

11.15.6.2 Lighting: Provide a wall-mounted fluorescent or compact fluorescent ("jelly jar") luminaire(s), 110 lux (10 footcandles) average maintained illuminance, and a switch.

11.15.6.3 Communications: None.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

11.15.6.4 Cable TV: None.

11.16 Multi-Purpose Room

11.16.1 Space Function: Exercise and recreation room. Provide a minimum of 1 space per floor.

11.16.2 Architectural Issues:

11.16.2.1 Walls: Paint on CMU.

11.16.2.2 Floors: VCT.

11.16.2.3 Ceilings: 2.4 m (8') high SACT.

11.16.2.4 Doors: Door width of 900 mm x 2130 mm (3'-0" x 7'-0") Half Glass Solid Core Wood door and Hollow Metal frames grouted solid. Each door to receive Heavy Duty Hardware, Three Hinges, One Mortise Lockset Passage Function, Door Closer, Wall Stop, Stainless Steel Kick Plate.

11.16.2.5 Windows: Exterior windows as shown on elevations. Interior windows of hollow metal frames, tempered glass vision panels.

11.16.2.6 Furniture: None.

11.16.3 Fire Protection Issues: These areas shall receive both fire suppression sprinklers and fire alarm notification appliances.

11.16.3.1 Fire Suppression Sprinklers: Sprinkler system for these spaces shall be designed per NFPA 13. Sprinkler heads shall be the semi-recessed pendent type. Provide the appropriate number of spaced heads as dictated by room size.

11.16.3.2 Fire alarm notification appliances shall be located in this space per NFPA 72.

11.16.4 Mechanical – HVAC Issues:

11.16.4.1 Zone Thermostat Type: Wall-mounted temperature sensor.

11.16.4.2 Special Exhaust or Ventilation Requirements: Ventilation shall comply with ASHRAE 62.

11.16.4.3 Special Humidity Requirements: None.

11.16.4.4 Temperature Requirements:

	Normal	Setback
Heating:	20°C (68°F)	12.8°C (55°F)
Cooling:	23.9°C (75°F)	29.5°C (85°F)

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

11.16.5 Mechanical – Plumbing Issues: None.

11.16.6 Electrical Issues:

11.16.6.1 Power: Provide general purpose receptacles on each wall. No point on any wall shall be more than 1.8 m (6 feet) from a receptacle. There shall be a maximum of two receptacles on a circuit in these two rooms.

11.16.6.2 Lighting: Provide recessed troffer fluorescent luminaires, 330 lux (30 footcandles) average maintained illuminance, and switches at the entry into the room. Provide two-level lighting and occupancy sensors. Provide exit and emergency lighting as required by the Life Safety Code.

11.16.6.3 Communications: Provide one combination data/telephone outlet with one telephone and one data jack and cover and one wall-phone telephone with jack and cover. Provide category 6 cable for both telephone and data circuits from the jacks to the Communications Room on that floor. Provide 27 mm (1") EMT from the corridor to each data/telephone outlet for telephone and data circuits.

11.16.6.4 Cable TV: Provide one cable TV outlet with jack and cover. Provide RG-6 cable from the jack to the Communications Room on that floor. Provide 21 mm (3/4") EMT from the corridor to the CATV outlet.

11.17 Mail Distribution

11.17.1 Space Function: Secure area for sorting incoming mail and distributing to rear loading mailboxes and parcel lockers.

11.17.2 Architectural Issues: Provide a minimum of 1800 mm (6') clear between the back of the mailboxes and any obstructions.

11.17.2.1 Walls: Paint on CMU.

11.17.2.2 Floors: VCT.

11.17.2.3 Ceilings: 2.4 m (8') high SACT.

11.17.2.4 Doors: Door width of 900 mm x 2130 mm (3'-0" x 7'-0") Hollow Metal flush door and Hollow Metal frames grouted solid. Each door to receive Heavy Duty Hardware, Three Hinges, One Mortise Lockset Storeroom Function, Best cylinder, keyed distinct from all others in the building, Door Closer, Wall Stop, Stainless Steel Kick Plate.

11.17.2.5 Windows: Exterior windows as shown on elevations. Aluminum storefront, laminated glazing.

11.17.2.6 Furnishings/Fixtures/Equipment: Provide a plastic laminate faced sorting counter 750 mm deep x minimum 2400 mm long x 900 mm high (2'-6" x 8' x 3'). Provide 92 rear loading mailboxes. Provide a minimum of nine parcel lockers. Provide one outgoing mail collection box.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

11.17.3 Fire Protection Issues: This area shall receive fire suppression sprinklers.

11.17.3.1 Fire Suppression Sprinklers: Sprinkler system for this space shall be designed per NFPA 13. Sprinkler heads shall be the semi-recessed pendent type. Provide the appropriate number of spaced heads as dictated by room size.

11.17.4 Mechanical – HVAC Issues:

11.17.4.1 Zone Thermostat Type: Wall-mounted temperature sensor.

11.17.4.2 Special Exhaust or Ventilation Requirements: Exhaust shall comply with ASHRAE 62.

11.17.4.3 Special Humidity Requirements: None.

11.17.4.4 Temperature Requirements:

	Normal	Setback
Heating:	20°C (68°F)	12.8°C (55°F)
Cooling:	23.9°C (75°F)	29.5°C (85°F)

11.17.5 Mechanical – Plumbing Issues: None.

11.17.6 Electrical Issues:

11.17.6.1 Power: Provide general purpose receptacles on each wall. No point on any wall shall be more than 1.8 m (6 feet) from a receptacle.

11.17.6.2 Lighting: Provide recessed troffer fluorescent luminaires, 540 lux (50 footcandles) average maintained illuminance, and a switch at the entry into the room. Provide occupancy sensors.

11.17.6.3 Communications: Provide one combination data/telephone outlet with one telephone and one data jack and cover and one wall-phone telephone with jack and cover. Provide category 6 cable for both telephone and data circuits from the jacks to the Communications Room on that floor. Provide 27 mm (1") EMT from the corridor to each data/telephone outlet for telephone and data circuits.

11.17.6.4 Cable TV: None.

11.18 Mailbox Access Area

11.18.1 Space Function: Mail pickup area for building residents.

11.18.2 Architectural Issues:

11.18.2.1 Minimum Size: As required to access the 92 mailboxes, 9 parcel lockers and 1 mail collection box.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 11.18.2.2 Walls: Paint on CMU.
- 11.18.2.3 Floors: VCT.
- 11.18.2.4 Ceilings: 2.4 m (8') SACT.
- 11.18.2.5 Doors: None.
- 11.18.2.6 Windows: None.
- 11.18.2.7 Furnishings/Fixtures/Equipment: Writing desk, minimum 300 mm wide, 300 mm deep (12" x 12"), wall mounted at 1100 mm high (3'-8"). 92 mailboxes, 9 parcel lockers and 1 mail collection box.
- 11.18.3 Fire Protection Issues: This area shall receive fire suppression sprinklers.
- 11.18.3.1 Fire Suppression Sprinklers: Sprinkler system for this space shall be designed per NFPA 13. Sprinkler heads shall be the semi-recessed pendent type. Provide the appropriate number of spaced heads as dictated by area size.
- 11.18.4 Mechanical – HVAC Issues:
- 11.18.4.1 Zone Thermostat Type: Wall-mounted temperature sensor.
- 11.18.4.2 Special Exhaust or Ventilation Requirements: Exhaust shall comply with ASHRAE 62.
- 11.18.4.3 Special Humidity Requirements: None.
- 11.18.4.4 Temperature Requirements:
- | | | |
|----------|---------------|---------------|
| | Normal | Setback |
| Heating: | 20°C (68°F) | 12.8°C (55°F) |
| Cooling: | 23.9°C (75°F) | 29.5°C (85°F) |
- 11.18.5 Mechanical – Plumbing Issues: None.
- 11.18.6 Electrical Issues:
- 11.18.6.1 Power: None.
- 11.18.6.2 Lighting: Provide recessed troffer or wall-mounted fluorescent luminaire(s), 330 lux (30 footcandles) average maintained illuminance on the writing desk, and a switch in the Mail Distribution Room.
- 11.18.6.3 Communications: None.
- 11.18.6.4 Cable TV: None.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

11.19 Communications Room

- 11.19.1 Space Function: Room to house network and phone equipment. Provide one space per floor.
- 11.19.2 Architectural Issues:
 - 11.19.2.1 Walls: Painted fire retardant plywood on paint on CMU walls.
 - 11.19.2.2 Floors: Anti static VCT.
 - 11.19.2.3 Ceilings: 3 m (10') high, paint underside of precast concrete plank. Use vapor retarding paint at second floor rooms.
 - 11.19.2.4 Doors: Door width of 900 mm x 2130 mm (3'-0" x 7'-0") Solid Core Wood door and Hollow Metal frames grouted solid. Each door to receive Heavy Duty Hardware, Three Hinges, One Mortise Lockset Storeroom Function, Best cylinder, keyed distinct from all others in the building, Door Closer, Wall Stop, Stainless Steel Kick Plate.
 - 11.19.2.5 Windows: None.
- 11.19.3 Fire Protection Issues: This area shall receive fire suppression sprinklers.
 - 11.19.3.1 Fire Suppression Sprinklers: Sprinkler system for this space shall be designed per NFPA 13. Sprinkler heads shall be the upright type. Provide the appropriate number of spaced heads as dictated by room size.
- 11.19.4 Mechanical – HVAC Issues: This area shall be conditioned by a dedicated HVAC system at all times.
 - 11.19.4.1 Zone Thermostat Type: Wall-mounted temperature sensor.
 - 11.19.4.2 Special Exhaust or Ventilation Requirements: None.
 - 11.19.4.3 Special Humidity Requirements: None.
 - 11.19.4.4 Temperature Requirements:

Heating	22.2°C (72°F)
Cooling	22.2°C (72°F)
 - 11.19.4.5 Special Requirements: Summer humidity control
- 11.19.5 Mechanical – Plumbing Issues: None.
- 11.19.6 Electrical Issues:
 - 11.19.6.1 Power: Power requirements apply to both communications rooms. Provide two general purpose receptacles. In addition, provide receptacles on dedicated circuits for the data system (quad receptacle mounted on the data rack), telephone system (on the telephone backboards), and cable TV (CATV) equipment (4 separate circuits: one for data, one for telephone, one for CATV, and one for the general-purpose receptacles).

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 11.19.6.2 Lighting: Provide pendant-mounted industrial type luminaires, 540 lux (50 footcandles) average maintained illuminance, and a switch at the entry into the room.
- 11.19.6.3 Communications: Provide the following in both Communications Rooms:
- a. A 480 mm (19") data rack, 1.8 m (6 feet) high. Bond the cable rack to the telephone ground busbar with # 6 copper wire.
 - b. 12 port fiber patch panel.
 - c. 3 - 48 port category 6 patch panels.
 - d. 1.2 m x 2.4 m x 19 mm (4' x 8' x 3/4") plywood telephone terminal board and sufficient punch down blocks for the telephone cables.
 - e. Provide solid bottom cable trays from the Communications Room to the ends of each corridor of each floor, minimum size 300 mm (12") wide by 150 mm (6") high with dividers, capacity as required to support cables plus 25% spares.
 - f. Provide channel type cable racks throughout the room to provide distribution between the telephone backboard, equipment racks, and distribution cable trays.
 - g. Provide a telephone ground busbar (TGB). Provide a #6 ground wire from the TGB and connect it to the building's metallic ground. Bond as required by the National Electrical Code. Provide #6 copper ground wire long enough to reach from the TGB to the most distant point on the telephone terminal board using 90 degree bends at every change in direction.
 - h. Provide one combination data/telephone outlet with one telephone and one data jack and cover. Provide category 6 cables for both telephone and data circuits.
- 11.19.6.4 Cable TV: Provide a 2.4 m x 2.4 m x 19 mm (8' x 8' x 3/4") plywood backboard.
- a. Provide approximately six lockable junction boxes, approximately 300 mm x 450 mm x 200 mm (12" x 18" x 8"). Provide jacks in each box to terminate all cables from each CATV outlet and to connect to the CATV distribution system. Verify specific requirements with Time Warner.
 - b. Provide a CATV ground busbar (CGB). Provide a #6 ground wire from the CGB and connect it to the building's metallic ground. Bond as required by the National Electrical Code.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

11.20 Electric Room

- 11.20.1 Space Function: Room to house electric service and distribution panels. Provide one space per floor.
- 11.20.2 Architectural Issues:
 - 11.20.2.1 Walls: Paint on CMU.
 - 11.20.2.2 Floors: Sealed concrete.
 - 11.20.2.3 Ceilings: Painted precast concrete plank.
 - 11.20.2.4 First Floor Interior Doors: Pair of doors width of 900 mm x 2130 mm (3'-0" x 7'-0") Hollow metal doors and frames grouted solid. Each opening to receive Heavy Duty Hardware, Three Hinges, One Mortise Lockset Storeroom Function, Best cylinder, keyed distinct from all others in the building, One Door Closer, Wall Stop, Flush Bolts, Stainless Steel Kick Plate.
 - 11.20.2.5 Second Floor Interior Door: Door width 900 mm, 2130 mm high (3'-0" x 7'-0") solid core flush wood door. Painted hollow metal frame U/L Fire Rated, grouted solid. Entry door to receive Heavy Duty Hardware, Three Hinges, One Mortise Storeoom function Lockset, with lever handles, Best cylinder, keyed distinct from all others in the building, Door Closer, Wall Stop, Stainless Steel Kick Plate.
 - 11.20.2.6 Windows: None.
 - 11.20.2.7 Furnishings/Fixtures/Equipment: None.
- 11.20.3 Fire Protection Issues: These areas shall receive fire suppression sprinklers, fire detection systems and fire alarm control equipment.
 - 11.20.3.1 Fire Suppression Sprinklers: Sprinkler system for these spaces shall be designed per NFPA 13. Sprinkler heads shall be the upright type. Provide the appropriate number of spaced heads as dictated by room size.
 - 11.20.3.2 Fire Detection: Provide one analog / addressable system smoke detector. Mount detector to ceiling according to NFPA 72 and manufacturer recommendations.
 - 11.20.3.3 Fire Alarm Control: The main fire alarm control panel and wireless fire alarm transceiver shall be wall mounted in the ground floor electrical room. All necessary fire alarm addressable monitor and control modules used for auxiliary fire alarm functions shall also be mounted adjacent to the main fire alarm control panel in junction boxes and labeled according to their function.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

11.20.4 Mechanical – HVAC Issues: This area requires ventilation, exhaust, and winter heat. Coordinate emergency fan shutdown requirements with fire protection and electrical designs. Refer to UFC-3-410-01FA, paragraph 4-7.

11.20.4.1 Zone Thermostat Type: Wall-mounted temperature sensor.

11.20.4.2 Special Exhaust or Ventilation Requirements: Exhaust and ventilation shall comply with ASHRAE 62 and NFPA 54, and as required to maintain within specified limits.

11.20.4.3 Special Humidity Requirements: None

11.20.4.4 Temperature Requirements:

Heating: 12.8°C (55°F)

Cooling: None

Ventilation: Temperature not to exceed 35°C (95°F).

11.20.5 Mechanical – Plumbing Issues: None.

11.20.6 Electrical Issues:

11.20.6.1 Power:

- a. Provide main service panelboard with meter (first floor only).
- b. Provide 480-120/208 volt, 3 phase, delta-wye connected, energy efficient step-down transformer (both floors).
- c. Provide 480/277 and 120/208 volt panelboards as required for power distribution on each floor. Note that the size of the electrical rooms has been reduced due to placement of some panelboards in the corridors, mechanical rooms, etc.
- d. Provide GFCI receptacles on 2 walls, maximum 6.2 m (20 ft) spacing between receptacles (both floors).
- e. Provide power to exterior electrical equipment, such as luminaires, and the lighted sign.

11.20.6.2 Lighting: Provide pendant-mounted industrial type fluorescent luminaires, 160 lux (15 footcandles) average maintained illuminance, and a switch at the door.

11.20.6.3 Communications: Provide one combination data/telephone outlet.

11.20.6.4 Cable TV: None.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

11.21 Mechanical Room

11.21.1 Space Function: Room to house mechanical systems. Provide one space per floor.

11.21.2 Architectural Issues: 2 hour fire rated walls.

11.21.2.1 Walls: Paint on CMU, grouted solid walls extending to underside of concrete plank above.

11.21.2.2 Floors: Sealed concrete.

11.21.2.3 Ceilings: Painted concrete plank.

11.21.2.4 Ground Floor Exterior Doors: Pair of doors width of 900 mm x 2130 mm (3'-0" x 7'-0") FRP door and Aluminum frames grouted solid. Each opening to receive Heavy Duty Hardware, Two Continuous Hinges, One Mortise Lockset Storeroom Function, Best cylinder, keyed distinct from all others in the building, Two Door Closer, Over Head Stop/Holder, Wall Stop, Flush Bolts, Stainless Steel Kick Plate, One Threshold x Pem-Kote x Sleeve Anchors, One Set Weather Stripping, Security Astragal, Two Sweeps.

11.21.2.5 Second Floor Interior Door: Door width 900 mm, 2130 mm high (3'-0" x 7'-0") solid core flush wood door. Painted hollow metal frame U/L Fire Rated, grouted solid. Entry door to receive Heavy Duty Hardware, Three Hinges, One Mortise Storeoom function Lockset, with lever handles, Best cylinder, keyed distinct from all others in the building, Door Closer, Wall Stop, Stainless Steel Kick Plate.

11.21.2.6 Windows: None.

11.21.2.7 Furnishings/Fixtures/Equipment: Steel access ladder with cage. Fire extinguisher and fire extinguisher cabinet.

11.21.3 Fire Protection Issues: These areas shall receive fire suppression sprinklers, the building fire suppression sprinkler main water service/riser, mechanical unit control relays, combustible gas detection, carbon monoxide gas detection, and respective gas detection notification appliances.

11.21.3.1 Fire Suppression Sprinklers: Sprinkler system for these spaces shall be designed per NFPA 13. Sprinkler heads shall be the upright type. Provide the appropriate number of spaced heads as dictated by room size.

11.21.3.2 Fire Suppression Sprinklers Service: The sprinkler system main water service/riser shall enter and be located in the first floor mechanical room. A 200 mm (8") double check detector back flow prevention valve assembly shall be connected to the fire service that enters the building. The main sprinkler riser shall be connected to the flow side of the back flow prevention valve. A wet-pipe sprinkler service riser shall be provided per NFPA 13 and as indicated in Section 7.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

- 11.21.3.3 Control Relays: Any mechanical unit designated to be shutdown on a general fire alarm activation as indicated in Section 7, shall have its respective shutdown control module/relay mounted within .9 m (3 ft) of the unit it is controlling. Relays shall be mounted in junction boxes and labeled as to their function.
- 11.21.3.4 Fire Notification: Fire alarm notification appliances shall be located in these spaces per NFPA 72.
- 11.21.3.5 Fire Manual Release: A manual fire alarm pull station shall be located directly adjacent to the exit from the room leading to the exterior of the building. Manual fire alarm pull station shall be equipped with protective covers as indicated in Section 7.
- 11.21.3.6 Gas Detection: Provide one combustible gas detector with notification appliance and one carbon monoxide detector with notification appliance in each mechanical room as indicated in Section 7.
- 11.21.4 Mechanical – HVAC Issues: This area requires ventilation, exhaust and winter heating. Emergency shutdown requirements with fire protection and coordination with electrical design. Refer to UFC-3-410-01FA, paragraph 4-7.
 - 11.21.4.1 Zone Thermostat Type: Wall-mounted temperature sensor.
 - 11.21.4.2 Special Exhaust or Ventilation Requirements: Exhaust and ventilation shall comply with ASHRAE 62, NFPA 90A, NFPA 211, NFPA 54 and as required to maintain temperature below 35°C (95°F).
 - 11.21.4.3 Special Humidity Requirements: None
 - 11.21.4.4 Temperature Requirements:
 - Heating: 12.8°C (55°F)
 - Cooling: None
 - Ventilation: Temperature not to exceed 35°C (95°F).
 - 11.21.4.5 Special Requirements: Emergency shutdown as required by codes. Contractor shall coordinate with other trades.
 - 11.21.4.6 Provide natural gas system for HVAC and domestic water heating equipment.
- 11.21.5 Mechanical – Plumbing Issues:
 - 11.21.5.1 Provide domestic water service including meter and backflow preventer.
 - 11.21.5.2 Provide domestic hot water heating system for servicing all plumbing fixtures.
 - 11.21.5.3 Provide floor drains with trap primer.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

11.21.5.4 Provide hose bibs.

11.21.5.5 Provide cold water makeup with backflow preventer for HVAC equipment.

11.21.5.6 Provide condensate and indirect waste piping from equipment to spill over floor drains.

11.21.6 Electrical Issues:

11.21.6.1 Power:

- a. Provide 480/277 and 120/208 volt panelboards for mechanical equipment as required (panelboards may be located in electric rooms). Provide power to all mechanical equipment located throughout the building and to exterior mechanical equipment, such as the chillers.
- b. Provide disconnect switches, motor starters, combination starters, and variable frequency drives as required for all mechanical equipment.
- c. Provide power for all energy management and control system/direct digital control system panels (EMCS/DDC) as required.
- d. Provide GFCI receptacles on 2 walls, maximum 6.2 m (20 ft) spacing between receptacles.
- e. Provide GFI receptacles in weatherproof boxes within 7.5 m (25 feet) of all exterior heating, air-conditioning, and refrigeration equipment as required by the National Electrical Code. Provide a cover that remains weather-tight with a plug in the receptacle.

11.21.6.2 Lighting: Provide pendant-mounted industrial type fluorescent luminaires for the first and second floor mechanical rooms. Provide 160 lux (15 footcandles) average maintained illuminance, and a switch at the door (first and second floors).

- a. Provide high pressure sodium wall-pack luminaire on the exterior wall above the exterior door, 20 lux (2 footcandles) average maintained illuminance within 3 m (10 feet) of the doors.

11.21.6.3 Communications: Provide one combination data/telephone outlet.

11.21.6.4 Cable TV: None.

11.22 Exterior Canopy- Inside of "L" (North)

11.22.1 Space Function: Provides weather protection at building entrance.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

11.22.2 Architectural Issues:

11.22.2.1 Minimum Size: As required to protect against sliding snow from roof above. Utilize the sliding snow calculator available from the Army Corps of Engineers. With a wall height of 6700 mm (22 feet), a slope of 4:12, a canopy height of 3000 mm (10 feet) and a roof span of 9150 mm (30 feet), the snow could cover a horizontal distance of 4870 mm (16 feet) from the edge of the upper eaves.

11.22.2.2 Walls: None – Brick clad piers.

11.22.2.3 Floors: Concrete sidewalk – See sheet C-2.

11.22.2.4 Ceilings: Linear metal.

11.22.2.5 Doors: None.

11.22.2.6 Windows: None.

11.22.2.7 Furnishings/Fixtures/Equipment: None.

11.22.3 Fire Protection Issues: None.

11.22.4 Mechanical – HVAC Issues: None.

11.22.5 Mechanical – Plumbing Issues: None.

11.22.6 Electrical Issues:

11.22.6.1 Power: Provide a GFCI receptacle in a weather-proof box on the outside of the exterior wall in a suitable location near the entry to the lobby. Provide a cover that remains weather-tight with a plug in the receptacle.

11.22.6.2 Lighting: Provide high pressure sodium luminaires, 50 lux (5 footcandles) average maintained illuminance. Provide photocell control via a mechanically-held magnetic lighting contactor with a hand-off-auto switch located in the electric room. One photocell and one contactor may be used to control all exterior luminaires, including site lighting and wall packs.

11.22.6.3 Communications: None.

11.22.6.4 Cable TV: None.

11.23 Exterior Canopy- Outside of “L” (South)

11.23.1 Space Function: Provides weather protection at building entrance.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

11.23.2 Architectural Issues:

11.23.2.1 Minimum Size: As required to protect against sliding snow from roof above. Utilize the sliding snow calculator available from the Army Corps of Engineers. With a wall height of 10360 mm (34 feet), a slope of 4:12, a canopy height of 3000 mm (10 feet) and a roof span of 3650 mm (12 feet), the snow could cover a horizontal distance of 4970 mm (16.3 feet) from the vertical building wall.

11.23.2.2 Walls: None – Brick clad piers.

11.23.2.3 Floors: Concrete sidewalk – See sheet C-2.

11.23.2.4 Ceilings: Linear metal.

11.23.2.5 Doors: None.

11.23.2.6 Windows: None.

11.23.2.7 Furnishings/Fixtures/Equipment: None.

11.23.3 Fire Protection Issues: None.

11.23.4 Mechanical – HVAC Issues: None.

11.23.5 Mechanical – Plumbing Issues: None.

11.23.6 Electrical Issues:

11.23.6.1 Power: Provide a GFCI receptacle in a weather-proof box on the outside of the exterior wall in a suitable location near the entry to the lobby. Provide a cover that remains weather-tight with a plug in the receptacle.

11.23.6.2 Lighting: Provide high pressure sodium luminaires, 50 lux (5 footcandles) average maintained illuminance. Provide photocell control via a mechanically-held magnetic lighting contactor with a hand-off-auto switch located in the electric room. One photocell and one contactor may be used to control all exterior luminaires, including site lighting.

11.23.6.3 Communications: None.

11.23.6.4 Cable TV: None.

11.24 **Third Floor Mechanical Room**

11.24.1 Space Function: Storage.

11.24.2 Architectural Issues:

11.24.2.1 Walls: Exposed CMU.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- 11.24.2.2 Floors: Sealed concrete.
- 11.24.2.3 Ceilings: 2.1 m (7 feet) high maximum, exposed concrete plank.
- 11.24.2.4 Doors:
 - a. Exterior pair of 900 mm wide x 2130 mm high (3'-0" x 7'-0") insulated FRP doors x Aluminum Frame. Each opening to receive Heavy Duty Hardware, Two Continuous Hinges, Four Slide Bolts, One Set Weather Stripping, Astragal Two Sweeps. Supply a removable safety rail conforming to OSHA standards.
 - b. Interior access doors 900 mm wide x 2130 mm high (3'-0" x 7'-0"), 2 hour fire rated painted Hollow Metal door and frames grouted solid, to access attic duct space, U/L Fire Rated. Each door to receive Heavy Duty Hardware, Two Hinges, One Mortise Lockset Passage Function, Door Closer.
- 11.24.2.5 Windows: None.
- 11.24.2.6 Furniture: None.
- 11.24.2.7 Equipment: Intake and exhaust louvers, integrated into window systems-see exterior elevations.
- 11.24.3 Fire Protection Issues: These areas shall receive fire suppression sprinklers, mechanical unit control relays, combustible gas detection, carbon monoxide gas detection, and respective gas detection notification appliances.
 - 11.24.3.1 Fire Suppression Sprinklers: Sprinkler system for these spaces shall be designed per NFPA 13. Sprinkler heads shall be the upright type. Provide the appropriate number of spaced heads as dictated by room size.
 - 11.24.3.2 Control Relays: Any mechanical unit designated to be shutdown on a general fire alarm activation as indicated in Section 7, shall have its respective shutdown control module/relay mounted within .9 m (3 ft) of the unit it is controlling. Relays shall be mounted in junction boxes and labeled as to their function.
 - 11.24.3.3 Fire Notification: Fire alarm notification appliances shall be located in these spaces per NFPA 72.
 - 11.24.3.4 Fire Manual Release: A manual fire alarm pull station shall be located directly adjacent to the exit from the room leading to the corridor below (near top of ladder). Manual fire alarm pull station shall be equipped with protective covers as indicated in Section 7.
 - 11.24.3.5 Gas Detection: Provide one combustible gas detector with notification appliance and one carbon monoxide detector with notification appliance in each mechanical room as indicated in Section 7.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

- 11.24.4 Mechanical – HVAC Issues: This area requires ventilation, exhaust and winter heating. Emergency shutdown requirements with fire protection and coordination with electrical design.
- 11.24.4.1 Zone Thermostat Type: Wall-mounted temperature sensor.
- 11.24.4.2 Special Exhaust or Ventilation Requirements: Exhaust and ventilation shall comply with ASHRAE 62, NFPA 90A, NFPA 211, NFPA 54 and as required to maintain temperature below 35°C (95°F).
- 11.24.4.3 Special Humidity Requirements: None
- 11.24.4.4 Temperature Requirements:
Heating: 12.8°C (55°F)
Cooling: None
Ventilation: Temperature not to exceed 35°C (95°F).
- 11.24.4.5 Special Requirements: Emergency shutdown as required by codes. Contractor shall coordinate with other trades.
- 11.24.5 Mechanical – Plumbing Issues: None
- 11.24.6 Electrical Issues:
- 11.24.6.1 Power:
- a. Provide 480/277 and 120/208 volt panelboards for mechanical equipment as required. Provide power to all mechanical equipment.
 - b. Provide disconnect switches, motor starters, combination starters, and variable frequency drives as required for all mechanical equipment.
 - c. Provide power for all energy management and control system/direct digital control system panels (EMCS/DDC) as required.
 - d. Provide GFCI receptacles on 2 walls, maximum 6.2 m (20 ft) spacing between receptacles.
- 11.24.6.2 Lighting: Provide ceiling or wall-mounted fluorescent luminaires. Provide 160 lux (15 footcandles) average maintained illuminance, and a switch at the access point(s) to the third floor.
- 11.24.6.3 Communications: Provide one combination data/telephone outlet.
- 11.24.6.4 Cable TV: None.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

11.25 Electric Closet

11.25.1 Space Function: Closet to conceal electrical panels.

11.25.2 Architectural Issues: Corridor wall is one hour fire rated.

11.25.2.1 Walls: Paint on CMU, extending from floor to underside of precast concrete plank.

11.25.2.2 Floor: Sealed concrete.

11.25.2.3 Ceiling: Paint underside of second floor concrete plank with vapor retarding paint.

11.25.2.4 Doors: Door width 800 mm, 2130 mm high (2'8" x 7'-0") solid core flush wood door. Painted hollow metal frame, grouted solid, U/L Fire Rated. Each door to receive Heavy Duty Hardware, Two Hinges, One Mortise Dead Lock Storeroom Function, Best cylinder, keyed distinct from all others in the building, Door Closer.

11.25.2.5 Windows: None.

11.25.2.6 Furniture/ Equipment: None.

11.25.3 Fire Protection Issues: None.

11.25.4 Mechanical – HVAC Issues: None.

11.25.5 Mechanical – Plumbing Issues: None.

11.25.6 Electrical Issues: Installation of electric distribution panels.

11.26 Warm Duct Space

11.26.1 Space Function: Mechanical space for ductwork, within the thermal envelope.

11.26.2 Architectural Issues: Corridor wall is one hour fire rated.

11.26.2.1 Walls: Metal stud wall framing with 16 mm (5/8") gypsum board, R20 wall insulation, 6 mil. poly vapor barrier on warm side.

11.26.2.2 Floor: 19 mm (3/4") plywood floor if wood roof trusses are utilized, expanded metal decking if LGMF is utilized.

11.26.2.3 Ceiling: R40 ceiling insulation, 16 mm (5/8") gypsum board, 6 mil. poly vapor barrier on warm side.

11.26.2.4 Doors: Insulated hollow metal access doors to cold attic space. One door each side.

11.26.2.5 Windows: None.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

11.26.2.6 Accessories: None.

11.26.3 Fire Protection Issues: None.

11.26.4 Mechanical – HVAC Issues: Provide minimum heat in this space (i.e. finned tube radiation with self-contained control valve; expanded metal grille).

11.26.4.1 Zone Thermostat Type: None.

11.26.4.2 Special Humidity Requirements: None.

11.26.4.3 Special exhaust or Ventilation Requirements: None.

11.26.4.4 Temperature Requirements:

	Normal	Setback
Heating:	7.5°C (45°F)	7.5°C (45°F)
Cooling:	None	None

11.26.5 Mechanical – Plumbing Issues: None.

11.26.6 Electrical Issues:

11.26.6.1 Power: None.

11.26.6.2 Lighting: Provide pendant-mounted industrial or wall-mounted type luminaires, 110 lux (10 footcandles) average maintained illuminance, and a switch at the entry into the space.

11.26.6.3 Communications: None.

11.26.6.4 Cable TV: None.

11.27 Pavilions

11.27.1 Space Function: covered exterior space.

11.27.2 Architectural Issues: Match building finishes.

11.27.2.1 Walls: painted steel columns.

11.27.2.2 Floor: stained and sealed concrete slab on grade.

11.27.2.3 Ceiling: Stained and sealed structural wood roof decking.

11.27.2.4 Doors: None.

11.27.2.5 Windows: None.

11.27.2.6 Accessories: Bird Control Devices.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

11.27.3 Fire Protection Issues: None.

11.27.4 Mechanical – HVAC Issues: None.

11.27.5 Mechanical – Plumbing Issues: None.

11.27.6 Electrical Issues:

11.27.6.1 Power: Provide four ground fault protected receptacles in weather-proof enclosures on two separate circuits at each pavilion. Size wires to limit the voltage drop to a maximum of 4% from the building service to the farthest receptacle with a 10 amp load at 90% power factor.

11.27.6.2 Lighting: Provide metal halide luminaries for the covered space controlled by the building photocell and lighting contactor. In addition, provide a weatherproof, lockable local switch at the pavilion. Average maintained illuminance shall be 100 lux (10 footcandles) in the covered space and 10 lux (1 footcandle) on the path between the building and pavilion, which shall be lighted by high pressure sodium luminaries.

11.27.7 Communications: None.

11.27.8 Cable TV: None

-- End of Section --

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

TABLE OF CONTENTS

SECTION 01012

DESIGN AFTER AWARD

1.0	GENERAL
2.0	DESIGNER OF RECORD
3.0	DESIGN CONFERENCES
4.0	STAGES OF DESIGN SUBMITTALS
5.0	QUANTITY OF DESIGN SUBMITTALS
6.0	MAILING OF DESIGN SUBMITTALS
7.0	COORDINATION
8.0	GOVERNMENT REVIEW COMMENTS
9.0	DESIGN ANALYSIS
10.0	DRAWINGS
11.0	SPECIFICATIONS
12.0	SURVEYING AND MAPPING
13.0	CONTENTS OF DESIGN SUBMITTALS
14.0	DD FORM 1354 "TRANSFER AND ACCEPTANCE OF MILITARY REAL PROPERTY"
15.0	RESIDENT MANAGEMENT SYSTEMS (RMS)

SECTION 01012

DESIGN AFTER AWARD

1.0 GENERAL

1.1 Compliance and Certification

Contractor shall certify that all items submitted in the design documents (after contract award) comply with all the stated RFP requirements. The criteria specified in this RFP are binding contract criteria. In case of any conflict between the RFP criteria and Contractor's submittals, the RFP criteria will govern unless there is a written and signed agreement between Contracting Officer and Contractor waiving a specific requirement.

1.2 Key Personnel, Subcontractors and Outside Associates or Consultants

In connection with the services covered by this contract, any in-house personnel, subcontractors, and outside associates or consultants will be limited to individuals or firms that were specifically identified and agreed to during negotiations. The contractor shall obtain the Contracting Officers written consent before making any substitution for these designated in-house personnel, subcontractors, associates, or consultants.

- a. Substitution of key personnel will not be permitted unless approved in writing by the Contracting Officer/Source Selection Authority and as administrative modification to the contract is issued to incorporate the change. The authority for substitution of key personnel lies solely with the Contracting Officer and will not be delegated to the ACO or COR.
- b. Substitution of key personnel will only be allowed under the following Conditions:
 - Change of Employment
 - Would pose hardship upon the employee which was not known at the time the proposal was submitted
 - Sickness
 - A bait and switch of team members from proposal to execution phase is not allowed
 - Any proposed team member replacement shall meet or exceed the qualifications noted in the specifications for their specialty.

1.3 Responsibility of the Contractor for Design

- a. The Contractor shall be responsible for the professional quality, technical accuracy, and the coordination of all designs, drawings, specifications, and any other non-construction services furnished under this contract. The Contractor shall, without additional compensation, correct or revise any errors or deficiency in its designs, drawings, specifications, and other non-construction services.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- b. Neither the Government's review, approval or acceptance of, nor payment for, the services required under this contract shall be construed to operate as a waiver of any rights under this contract or of any cause of action arising out of the performance of this contract, and the Contractor shall be and remain liable to the Government in accordance with applicable law for all damages to the Government caused by the Contractor's negligent performance of any of the services described in paragraph (a) furnished under this contract.
- c. The rights and remedies of the Government provided for under this contract are in addition to any other rights and remedies provided by law.
- d. Independent Technical Review (ITR) shall be performed as follows, all design submissions are reviewed by a qualified person or team, not affiliated with the development of a project/product, for the purpose of confirming the proper application of clearly established criteria, regulations, laws, codes, principles and professional procedures. It includes the verification of assumptions, methods, and level of complexity of the analysis. It also verifies the alternatives evaluated, appropriateness of data used, reasonableness of the results and functionality of the product relative to the customer's requirements.

1.4 Sequence of Design-Construction

- a. After receipt of the Contract Notice to Proceed (NTP) the Contractor shall initiate design, comply with all design submission requirements as covered under Division 01 General Requirements, and obtain Government review of each submission. No construction may be started, until the Government reviews the Final Design submission and determines it satisfactory for purposes of beginning construction. The ACO or COR will notify the Contractor when the design is cleared for construction. The Government will not grant any time extension for any design resubmittal required when, in the opinion of the ACO or COR, the initial submission failed to meet the minimum quality requirements as set forth in the Contract.
- b. If the Government allows the Contractor to proceed with limited construction based on pending minor revisions to the reviewed Final Design submission, no payment will be made for any in-place construction related to the pending revisions until they are completed, resubmitted and are satisfactory to the Government.
- c. At Contractor's option, the design for site work, foundation work (including structural load calculations) and/or utilities may be submitted as a package separate from the remaining facilities. This design package can be submitted on a faster schedule to allow for an early start to construction of this work. This work shall meet all review requirements and all other contract requirements.

1.5 Contractor's Role During Process

The Contractors construction management key personnel shall be actively involved during the design process to effectively integrate the design and construction requirements of this contract. In addition to the typical required construction activities, the Contractor's involvement includes, but is not limited to actions such as: integrating the design schedule into the Master Schedule to maximize the effectiveness of fast-tracking design and construction (within the limits allowed in the contract), ensuring constructability and

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

economy of the design, integrating the shop drawing and installation drawing process into the design, executing the material and equipment acquisition programs to meet critical schedules, effectively interfacing the construction QC program with the design QC program, and maintaining and providing the design team with accurate, up-to-date redline and as-built documentation. The Contractor shall require and manage the active involvement of key trade subcontractors in the above activities.

1.6 Contract Drawings, Maps, and Specifications

- a The Government under this contract, will provide the Contractor, without charge, five (5) sets of Request for Proposal (RFP) packages except publications incorporated into the technical provisions by reference.

1.7 Design-Build Contract - Order of Precedence

Section 01010 is intended to identify specific project requirements. In cases of criteria conflict, Section 01010 holds precedence over all other criteria mentioned or referenced.

- a. The contract includes the standard contract clauses and schedules current at the time of contract award. It entails (1) the solicitation in its entirety, including all drawings, cuts, and illustrations, and any amendments, and (2) the successful offeror's accepted proposal. The contract constitutes and defines the entire agreement between the Contractor and the Government. No documentation shall be omitted which in any way bears upon the terms of that agreement.
- b. In the event of conflict or inconsistency between any of the provisions of this contract, precedence shall be given in the following order:
 - (1) Betterments: Any portions of the accepted proposal which both conform to and exceed the provisions of the solicitation.
 - (2) The provisions of the solicitation. (See also Section 00700 Contract Clauses: SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION.)
 - (3) All other provisions of the accepted proposal.
 - (4) Any design products including, but not limited to, plans, specifications, engineering studies and analyses, shop drawings, equipment installation drawings, etc.. These are "deliverables" under the contract and are not part of the contract itself. Design products must conform with all provisions of the contract, in order of precedence herein.

1.7.1 Field Verification

The Contractor shall verify field conditions which are required for final design. The information shall be reflected in the design documents.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

1.7.2 Topographical Information

Government has supplied available topographic and existing utility information for the project. Any additional topographic and existing utility information required for design after award of the contract shall be provided by Contractor.

2.0 DESIGNER OF RECORD

The Contractor shall identify the Designer of Record for each area of work. One Designer of Record may be responsible for more than one area. All areas of design disciplines shall be accounted for by a licensed Architect or Licensed Engineer of Record registered in New York State. All architects and engineers shall be licensed and possess current registration. The Designer(s) of Record shall stamp, sign, and date all design drawings under their responsible discipline at 100% design stage only. The Designer(s) of record shall have a current New York State PE registration. One of the Designers of Record may sign all drawings but only after the Designer of Record for each discipline has certified in writing that their area of work has been reviewed and meets all contract requirements. Each written certification shall be submitted to the government with the final package.

3.0 DESIGN CONFERENCES PRE-WORK

As part of the Pre-work Conference conducted after contract award, key representatives of the Government and the Contractor will review the design submission and review procedures specified herein, discuss the preliminary design schedule and provisions for phase completion of the D/B documents with construction activities (fast tracking), as appropriate, meet with the Corps of Engineers Design Review personnel and key Using Agency points of contact and any other appropriate pre-design discussion items.

4.0 STAGES OF DESIGN SUBMITTALS

Design submittals are required at the intermediate (75%) design stage and at the pre-final (95%) design stage. The requirements of each design stage are listed hereinafter. The Contractor shall reflect the number and contents of the design submittals, to include review periods in the progress chart. The 75%, 95% and 100% complete design submittals shall be made in one package each.

At Contractor's option, the design for site work, foundation work and/or utilities may be submitted as a package separate from the remaining facilities. This design package can be submitted on a faster schedule to allow for an early start to construction of this work. This work shall meet all review requirements and all other contract requirements.

4.1 Review Submittal (75%)

The review of this submittal is primarily to insure that the contract documents are proceeding in a timely manner and that the design criteria are being correctly included. The submittal shall consist of the following:

1. Design analysis, in support of the submitted documents.
2. 75% complete drawings.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

3. Draft specifications shall show all lined out (edited) portions of the specification sections on all items of work.
4. Environmental permit applications which are to be submitted to Corps for processing. When environmental permits are not required, the Contractor shall provide a statement with justification to that effect.
5. Colorboard(s) depicting all color/finish/material selections submitted for government approval.

4.2 Prefinal Design Review Submittal (95%)

The review of this submittal is to insure that the design is in accordance with the Contractor's proposal and the Contract during the design process. The Contractor shall submit the following documents for review:

1. Complete design analysis
2. Complete coordinated drawings between all disciplines
3. Complete specifications, without showing lined out (edited) portions.
4. Colorboard(s) depicting all proposed color/finish/material samples.
5. Annotated 75% comments

4.2.1 The Design Analysis submitted for Prefinal Design Review (95%) shall be in its final form. The Design Analysis shall include all backup material previously submitted and revised as necessary. All design calculations shall be included. The Design Analysis shall contain all explanatory material giving the design rationale for any design decisions which would not be obvious to an engineer reviewing the Final Drawings and Specifications.

4.2.2 The Contract Drawings submitted for Prefinal Design Review (95%) shall include the drawings previously submitted which have been revised and completed as necessary. The Contractor is expected to have completed all of his coordination checks and have the drawings in a design complete condition. The drawings shall be complete at this time including the incorporation of any design review comments generated by previous design reviews. The drawings shall contain all the details necessary to assure a clear understanding of the work throughout construction. Shop drawings will not be considered as design drawings. All design shall be shown on design drawings prior to submittal of shop drawings.

4.3 Design Complete Submittal (100%)

The Contractor shall revise the Contract Documents by incorporating any comments generated during the Prefinal Design Review (95%) and shall prepare final hard copy Contract Specifications. The Contractor shall submit the following documents for the Design Complete Submittal:

1. Design analysis, in final 100% complete form
2. Complete coordinated drawings between all disciplines

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

3. Complete specifications
 4. Colorboard(s) depicting all final color/finish/material selections approved by Ft. Drum.
 5. Annotated 95% review comments
 6. DD FORM 1354 "Transfer and Acceptance of Military Real Property.
 7. 100% close out of all Dr. Checks comments
- 4.3.1 The Contractor shall submit the Design Complete Submittal (100%) not later than 30 calendar days after the Government returns the annotated Prefinal Design Review Submittal (95%).
- 4.3.2 Corrected Final Submittal. If a sufficient number of comments are generated by the Government during the review of the Final Design Submittal (100%), and at the option of the Contracting Officer, Contractor shall submit corrected drawings, specifications, and DD Form 1354 for compliance check of the accepted review comments of the Final Design Submittal. The Corrected Final Submittal shall be appropriately stamped to describe the submittal package as follows: "For Review Only - Corrected Final Site, Foundation and/or Utility" or "For Review Only - Correct Final Facility". Each sheet of the drawings shall be so stamped accordingly.
- 5.0 QUANTITY OF DESIGN SUBMITTALS
- 5.1 General
- The documents which the Contractor shall submit to the Government for each submittal are listed and generally described hereinafter. Unless otherwise indicated, the Contractor shall submit thirty (30) copies of each item required to be submitted at the 75%, and 95% Review Submittal stages. All drawings for review submittals shall be full-size blue/black lines. At the Design Complete Submittal, the Contractor shall also submit five (5) complete full size sets and two (2) half size sets of drawings and two copies of CADD files on CD's in MicroStation format version 8.0, five (5) sets of the specifications and two (2) copies on CD's in Microsoft Word 7.0.
- 6.0 MAILING OF DESIGN SUBMITTALS
- 6.1 Mail all design submittals to the Government during design and construction, using an overnight mailing service. The Government will furnish the Contractor addresses where each copy shall be mailed to after award of contract. The submittals shall be mailed to not more than (6) different addresses.
- 6.2 Each design submittal shall have a transmittal letter accompanying it indicating the date, design percentage, type of submittal, list of items submitted, transmittal number and point of contact with telephone number.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

7.0 COORDINATION

7.1 Written Records

Prepare a written record of each design site visit, meeting, or conference, either telephonic or personal, and furnish within five (5) working days copies to the Contracting Officer and all parties involved. The written record shall include subject, names of participants, outline of discussion, and recommendation or conclusions. Number each written record for the particular project under design in consecutive order.

7.2 Design Request for Information (RFI) List

Throughout the life of this contract the Contractor shall furnish a biweekly "RFI" list for design related items. This list shall itemize in an orderly fashion design data required by the Contractor to advance the design in a timely manner. Each list shall include a sequence number, description of action item, name of the individual or agency responsible for satisfying the action item and remarks. The list will be maintained on a continuous basis with satisfied action items checked off and new action items added as required. Once a request for information is initiated, that item shall remain on the list until the requested information has been furnished or otherwise resolved. Copies of the list will be mailed to both the Administrative Contracting Officer and the agencies tasked with supplying the information.

8.0 GOVERNMENT REVIEW COMMENTS

8.1 Within 21 calendar days after Notice to Proceed, the Contractor shall submit for approval, a complete design schedule with all submittals and review times indicated in calendar dates. The Contractor shall update this schedule monthly.

8.2 After receipt, the Government will be allowed twenty-one (21) calendar days to review and comment on the 75% design submittal, twenty-one (21) calendar days to review and comment on the 95% design submittal, and twenty-one (21) calendar days to review and comment on the 100% design. For each design review submittal, Contracting Officer will furnish the Contractor comments from the various design sections and from other concerned agencies involved in the review process. The review will be for the conformance with the technical requirements of the solicitation and the Successful Offeror's Proposal. A system called Dr. Checks will be used to track all comments during the design phase.

8.3 Prior to each submission (75%, 95% and 100%) the contractor shall submit two (2) copies of the complete package requirements to the Contracting Officers Representative for review to check if the package meets the requirements for that submission. The government shall have 3 working days to review and comment on the package. The contractor shall receive the comments at the end of the third day and shall have three additional days to incorporate all comments. The review and comment period as stated above shall begin only after the contractor incorporates all comments and sends the required number of sets to the reviewers for that review submission.

8.4 If the Contractor disagrees technically with any comment or comments and does not intend to comply with the comment, he must clearly outline, with ample justification, the reasons for noncompliance within five (5) calendar days after receipt of these comments in order that his comment can be resolved. The Contractor shall furnish disposition of all comments, in

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

writing, with the next scheduled submittal. The Contractor is cautioned in that if he believes the action required by a comment exceeds the requirements of this contract, that he should take no action and notify the Contracting office in writing immediately. Review conferences will be held for each design submittal at Fort Drum. The Contractor shall bring the personnel that developed the design submittal to the review conference. These conferences will take place the week after the review period.

8.5 If a design submittal is over one (1) calendar day late in accordance with the latest design schedule, the Government review period will be extended 7 calendar days. The review conference will be held the week after the new review period. Submittal date revisions must be made in writing at least one (1) week prior to the effect submittal.

8.6 Review of submittals will not occur during period of December 22, 2003 through January 6, 2004. Submittals which override on this period will have review period extended to reflect this down time.

8.7 Government will have up to 30 days to issue construction NTP after review period of the 100% back check ends.

9.0 **DESIGN ANALYSIS**

9.1 **Media and Format**

Present the design analysis on 8½ inch by 11-inch paper except that larger sheets may be used when required for graphs or for other special calculation forms. All sheets shall be in reproducible form. The material may be typewritten, hand lettered, handwritten, or a combination thereof, provided it is legible. Side margins shall be 1-inch minimum to permit side binding and head-to-head printing. Bottom margins shall be 1-1/4 inches, with page numbers centered 1 inch from the bottom.

9.2 **Organization**

Assign the several parts and sheets of the design analysis a sequential binding number and bind them under a cover indicating the name of the facility and project number, if applicable. The title page shall carry the designation of the submittal being made. The complete design analysis presented for final review with the final drawings and specifications shall carry the designation "FINAL DESIGN ANALYSIS" on the title page.

9.3 **Design Calculations**

Design calculations are a part of the design analysis. Design calculations for the civil design (storm water, sanitary sewer, water, etc.) shall be in US customary units. When they are voluminous, bind them separately from the narrative part of the design analysis. Present the design calculations in a clean and legible form incorporating a title page and index for each volume. Furnish a table of contents, which shall be an index of the indices, when there is more than one volume. Identify the source of loading conditions, supplementary sketches, graphs, formulae, and references. Explain all assumptions and conclusions. Calculation sheets shall carry the names or initials of the designer and the checker and the dates of calculations and checking. No portion of the calculations shall be computed and checked by the same person.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

10.0 DRAWINGS

- 10.1 Prepare all drawings on Computer-Aided Design and Drafting (CADD) so they are well arranged and placed for ready reference and so that they present complete information. Drawings shall be complete. Unnecessary work such as duplicate views, notes and lettering, and repetition of details shall not be permitted. Do not show standard details not applicable to the project. Minimize unnecessary wasted space. Do not include details of standard products or items on the drawings which are adequately covered by specifications. Detail the drawings such that conformance with the RFP can be checked and to the extent that shop drawings can be checked. Do not use shop drawings as design drawings. The design drawings shall consist of drawing on an 840 mm x 1200 mm format. The Contractor shall use standard Corps of Engineers title blocks and borders on all drawings. Submit an index of drawings with each submittal. The Contracting Officer will furnish the Contractor file, drawing and specification numbers and CADD file names for inclusion in the title blocks of the drawings.
- 10.2 Create all drawings using CADD methods in MicroStation or AutoCAD format. Save all Design Complete CADD files as MicroStation 8.0. The Contractor shall use A/E/C CADD Standards Release 2.0, available at <http://tsc.wes.army.mil/intro.asp>. When a project is started the designer must contact the New York District Project Engineer, to obtain the project's CADD code. The sheet reference number (e.g., A-3) and the CADD code (e.g., E123) are combined to create the CADD file name (e.g., A3E123). This shall insure proper naming of files and tracking of the project within the New York District.
- 10.3 Only standard fonts provided by MicroStation or AutoCAD are to be used in the creation of CADD files. No fonts created by third parties or the designer are permitted.
- 10.4 The uses of Reference files and Xrefs during the design stage is up to the discretion of the designers. All CADD files at Design Complete submittal shall be free-standing, independent files, and not supported by reference files. All Reference files (MicroStation) and all Xrefs files (AutoCAD) shall be removed at Design Complete submittal.
- 10.5 Submit all Design Complete files including drawings and specifications on CD ROM with "Read Me" file. Submit (3) copies of all disks.
- 10.6 All drawings shall be prepared in soft metric scale.
- 10.6.1 The building drawings shall consist of 1:100 scale minimum floor plans. Draw elevations to a 1:100 scale and other visual information as required. Draw building wall sections at a minimum of 1:20 scale.
- 10.6.2 Use a minimum scale of 1:500 for the site and exterior utility drawings, unless otherwise indicated.

11.0 SPECIFICATIONS

- 11.1 Technical Specifications for Construction shall be prepared using UFGS guide specifications which establish the minimum basis for quality and product selection. The Contractor shall edit the guide specifications, but edits shall conform to the specific minimum requirements of this RFP and are subject to approval by the Government. Specifications for items not identified in the RFP or UFGS guide specifications shall be written by the Contractor. If the design is based on a specific product, the specification shall consist of the important features

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

of the product. The specification shall be detailed enough such that another product meeting the specification could be substituted and it would not adversely impact the project. The following listing of technical specifications is provided to indicate, as a minimum, those guide specifications which should be utilized for design and construction of the project. The list may not be all inclusive of every section required:

01330	Submittal Procedures
01525	Safety Requirements
02230	Clearing and Grubbing
02300	Earthwork
02315	Excavation, Filling and Backfilling for Buildings
02316	Excavation, Trenching and Backfilling for Utilities Systems
02510	Water Distribution System
02530	Sanitary Sewerage
02551	Natural Gas Distribution
02630	Storm Drainage
02722	Graded Crushed Aggregate Base Course for Flexible Pavement
02742	Hot Mix Bituminous Pavement
02748	Bituminous Tack and Prime Coats
02761	Pavement Markings
02770	Concrete Sidewalks and Curbs and Gutters
02921	Seeding
03100	Structural Concrete Formwork
03150	Expansion Joints, Contraction Joints and Waterstops
03200	Concrete Reinforcement
03300	Cast-in-Place Concrete
03410	Plant-Precast Structural Concrete
04200	Masonry
05090	Welding, Structural
05120	Structural Steel
05210	Steel Joists
05300	Steel Decking
05400	Cold Formed Metal Framing
05500	Miscellaneous Metal
06100	Rough Carpentry
06200	Finish Carpentry
06410	Laminate Clad Architectural Casework
06650	Solid Polymer (Solid Surfacing) Fabrications
07110	Bituminuous Dampproofing
07214	Board and Block Insulation
07600	Sheet Metalwork, General
07611	Steel Standing Seam Roofing
07840	Firestopping
07900	Joint Sealing
08110	Steel Doors and Frames
08120	Aluminum Doors and Frames
08210	Wood Doors
08390	Blast Resistant Doors
08520	Aluminum Windows
08581	Blast Resistant Tempered Glass Windows
08710	Door Hardware

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

08810	Glass and Glazing
08850	Fragment Retention Film for Glass
09250	Gypsum Wallboard
09310	Ceramic Tile, Quarry Tile and Paver Tile
09510	Acoustical Ceilings
09650	Resilient Flooring
09900	Paints and Coatings
10201	Metal Wall and Door Louvers
10800	Toilet Accessories
12301	Manufactured Vanities
12320	Cabinets and Countertops
12490	Window Treatment
13080	Seismic Protection for Miscellaneous Equipment
13100	Lighting Protection System
13851	Fire Detection and Alarm System, Addressable
13930	Wet-Pipe Fire Suppression Sprinklers
15050	Basic Mechanical Materials and Methods
15070	Seismic Protection for Mechanical Equipment
15080	Thermal Insulation for Mechanical Systems
15181	Hot Water and Glycol Piping and Accessories
15182	Refrigerant Piping
15190	Gas Supply Systems
15286	HVAC Pumps
15400	Plumbing, General Purpose
15556	Forced Hot Water Heating Systems Using Propylene Glycol Solution
15569	Low Pressure Water Heating Boilers
15700	Unitary Heating and Cooling Equipment
15708	Air Handling Units
15713	Room Fan Coil Units (4-Pipe Vertical)
15720	Water Chillers
15760	Terminal Heating and Cooling Units
15895	Air Supply, Distribution, Ventilation and Exhaust System
15951	Direct Digital Control for HVAC
15990	Testing, Adjusting and Balancing of HVAC Systems
15995	Commissioning of HVAC Systems
16050	Basic Electrical Materials and Methods
16070	Seismic Protection for Electrical Equipment
16375	Electrical Distribution System, Underground
16415	Electrical Work, Interior
16528	Exterior Lighting
16710	Premises Distribution System
16711	Telephone System, Outside Plant
16815	Cable Television Premises Distribution System

11.2 Submittal Register

The Contractor shall develop the submittal requirements for construction during the design phase of the contract, by producing a Contractor Submittal Register during design. Attach the submittal register for the submittal requirements of the entire project. Prepare the Submittal Register on ENG Form 4288. The Contractor shall be responsible for listing all required submittals necessary to insure the project requirements are complied with. The Register shall

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

identify submittal items such as shop drawing, manufacturer's literature, certificates of compliance, material samples, guarantees, test results, etc. that the Contractor shall submit for review and/or approval action during the life of the construction contract. The Contractor shall place all the Submittal Register pages in an appendix to Section 01330 SUBMITTAL PROCEDURES of the final specifications.

12.0 SURVEYING AND MAPPING

12.1 Survey Data

A site survey has been conducted and mapping prepared for the project site. The mapping is included in the information drawings provided with the RFP and is also available in MicroStation (3D File) electronic form.

12.1.1 The Contractor shall obtain any additional survey data and mapping required, as an extension of the provided mapping. A Digital Terrain Model (DTM) is not available.

13.0 CONTENTS OF DESIGN SUBMITTALS

13.1 The 75% Design Submittals

Submittals shall contain, as a minimum, the following:

13.1.1 Paving, Grading and Drainage:

1. The designer is required to contact Fort Drum Field Office to verify the correct procedure to follow to obtain construction permits. The designer shall prepare all permit applications required to a "READY FOR SIGNATURE" condition and forward them to the Contracting Officer for appropriate signatures and submittal to the state. All contacts with state agencies shall be documented in writing and furnished to the Corps of Engineers at the 95% submittal.
2. Pavement design calculations, details of pavement sections, paving plan layout and limits, jointing diagrams, joint types and details, striping details, and entrance locations and details.
3. Typical cross section for grading, paving, and excavation of ditches and backslopes and fill sections.
4. Grading plans with site drainage system, low points and culverts located, drainage ditches identified, pipe sizes, types, and inverts shown. Provide erosion control details as required.

13.1.2 Geotechnical

1. Additional geotechnical investigation if required.
2. Confirmation of final design parameters.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

13.1.3 Water Supply and Sanitary Sewage

1. Details of utility systems, appurtenances and detailed calculations.
2. Utility plans fully coordinated with other disciplines and checked for clearances at all utility crossings.

13.1.4 Landscaping and Fencing

1. Permanent seeding requirements, species types and mixtures, conditioners and soil amendments as required for final site turf establishment.
2. Temporary seeding plan to be coordinated with site grading and drainage. Provide erosion control measures and specific seed mixtures for each condition.
3. Fencing plan, installation details, and typical sections.
4. Gate locations, types, and sizes, installation details and sections.

13.1.5 Architectural

1. Design development plans indicating dimensions, column lines, major detail references, door numbers, etc.
2. Exterior elevations indicating materials, finishes, colors, etc.
3. Building sections indicating construction, materials, etc.
4. Wall sections and stair sections indicating construction, materials, dimensions, etc.
5. Finish schedules. Colorboards showing all color selections (50 mm x 75 mm samples minimum) for Government approval.
6. Door and window schedules.
7. Detail plans including:
 - a. Room names.
 - b. Door numbers.
 - c. Equipment.
 - d. Toilet accessories.
 - e. Dimensions.
 - f. Stair layouts.
 - g. Trench and service pit.

13.1.6 Structural Design

1. Description of the method of providing lateral stability for the structural system to meet seismic, wind and other load requirements as stated in Section 01010. Include sufficient calculations to verify the adequacy of the method.
2. Calculations for all principal roof, floor and foundation members.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

3. Drawings showing roof and floor framing plans as applicable. Structural members will be shown on the plans. A foundation plan shall also be furnished showing main footings and grade beams. Where beam, column, and footing schedules are used, show schedules and fill in sufficient items to indicate method to be used. Show typical bar bending diagrams. Typical sections shall be furnished for roof, floor, and foundation conditions. Structural drawings shall be separate from architectural drawings.
4. Include anchor bolt locations and details on foundation drawings.
5. Computer analyses used shall be widely accepted, commercially available programs, or complete documentation shall be provided.

13.1.7 Plumbing

1. List of all references used in the design including Government design documents and industry standards.
2. Justification and brief description of the types of plumbing fixtures, piping materials and equipment proposed for use.
3. Detail calculations for systems such as sizing of domestic hot water heater and piping and natural gas piping.
4. Locations and general arrangement of plumbing fixtures and major equipment.
5. Plan and riser diagrams of all areas including hot water, cold water, waste and vent piping. Piping layouts and risers should also include natural gas and meter as required.
6. Equipment and fixture schedules with descriptions, capacities, locations, connection sizes and other information as required.

13.1.8 Fire Suppression System

1. List of all references used in the design including Government design documents and industry standards.
2. Classification of each building in accordance with fire zone, building floor areas and height and number of stories.
3. Provide description of required fire protection including extinguishing equipment, detection equipment, alarm equipment and water supply. Alarm and detection equipment shall interface to requirements of Electronic System.
4. Plan and riser diagram of the sprinkler system.
5. Hydraulic calculations based on water flow test for each sprinkler system to insure that flow and pressure requirements can be met with current water supply. See Water Supply and Sanitary Sewage.

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

13.1.9 Heating Ventilation and Air Conditioning (HVAC)

1. Energy conservation shall be in accordance with UFC 3-400-01 Design: Energy Conservation.
2. Expanded and updated computerized heating and cooling load calculations and energy consumption performance calculations to be comprehensive with the progression of the design, as necessary.
3. HVAC legend.
4. Complete HVAC and plumbing equipment schedules with manufacturer's name and model number.
5. HVAC equipment plans and elevations, complete with ductwork, piping, control panels and control devices.
6. Boiler Room and Mechanical Room part plans and elevations indicating all equipment, tube pull clearances, piping, ductwork, control panels and devices, dampers, breechings, foundations pads, access doors, maintenance clearances, vents, drain piping, blowdown piping, chimneys, access doors, emergency break glass stations, maintenance platforms and ladders as may be required.
7. Plans of underground trench water and/or refrigerant piping with details of pipe sizes, insulation, weather protection covering, pipe supports and sleeves and seals at penetrations of foundation walls, fully coordinated with the concrete trench design provisions of the Site/Civil Division of the Work.
8. HVAC details, complete, including but not limited to details for vibration isolation, seismic restraints and sway bracing, breeching and chimney, roof penetrations, and underground concrete trench water and/or refrigerant piping supports.
9. Direct digital automatic temperature control and energy management control system points schedules. Points schedules shall be complete and fully coordinated with the existing Base Trane Tracer Summit remote central DDC EMCS, via telephone modem and portable operator terminal workstation, to provide complete remote central control, monitoring and alarm capability, in addition to local stand-alone DDC monitoring, control and alarm functions.
10. Schematic airflow diagrams for all air handling systems, indicating all duct sizes, automatic dampers and main air flow rates.
11. Schematic piping diagrams for all condensate, boiler feed, boiler water chemical treatment, glycol/water make-up and storage, hot glycol/water, refrigerant piping, boiler blowdown, boiler gas train and gas vent piping. Schematic piping diagrams shall be complete with all pipe sizes, main flow rates, control valves, vacuum breakers and automatic air vents, where applicable and as required.
12. HVAC controls, including automatic temperature controls sequences of operation, fully detailed and consistent with the DDC system points schedules drawings.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

13.1.10 Interior Electrical System

1. A narrative describing the electrical distribution system.
2. Floor plans developing the branch circuit wiring design for lighting, power, mechanical, and miscellaneous equipment.
3. Grounding system plan and related details.
4. Switchboard and panel schedules developed to this design level.
5. An upgraded power riser or one-line diagram.
6. Floor plans indicating the major components of the power distribution system, including service switchboard, panelboards, dimming control units, motor starter banks, etc. and the main HVAC equipment.
7. An upgraded lighting fixture schedule.
8. A symbol list.
9. Coordinated power systems analysis study.

13.1.11 Exterior Electrical System

1. A site electrical plan indicating the service requirements; connection details for splicing into medium voltage loop; primary feeder routing including manholes; underground branch circuit routing for grade mounted electrical equipment, parking lot lighting; telephone service routing including manholes.

13.1.12 Electronic Systems

1. Riser diagrams and details of the low voltage systems: fire alarm, telephone, which have been coordinated with the base requirements.
2. Floor plans indicating the low voltage system services.
3. Complete system construction and point to point wiring schematic drawings, including all component values and showing complete letter and number identification of all wire and cable as well as jacks, terminals, and connectors.
4. All panels, plates, and designation strips, including details relating to terminology, engraving, finish, and color.
5. All custom designed consoles, tables, carts, support bases, and shelves.
6. Schematic drawings of all custom components, assemblies, and circuitry.
7. All equipment modifications.
8. Run sheets or field wiring details.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

9. Patch panel assignment layout drawing.

10. Front elevation drawings of each equipment rack.

11. All items of equipment whether a stock manufactured item or custom built shall be supported by complete and detailed schematic drawings and replacement parts lists. No "black boxes" or unidentified components shall be acceptable.

13.1.13 Project Score

Project score for sustainable design using the Sustainable Project Rating Tool. Also submit a detailed description of points received for each category.

13.1.14 Draft edit of all specification sections.

13.2 The 95% Design Submittals

Submittals shall contain, as a minimum, the following:

13.2.1 Incorporate any changes required by comments on 75% Design Submittal.

13.2.2 Construction Permits:

The designer is required to contact Fort Drum Field Office to verify the correct procedure to follow to obtain construction permits. The designer shall prepare all permit applications required to a "READY FOR SIGNATURE" condition and forward them to the Contracting Officer for appropriate signatures and submittal to the state. All contacts with state agencies shall be documented in writing and furnished to the Corps of Engineers at the 95% submittal.

13.2.3 Civil:

Complete site and utility drawings which are coordinated with the specifications and the other engineering disciplines. Ensure that the plans are in compliance with the applicable codes and permits. It will be the Contractor's responsibility to implement the comments generated from any design review submittal as well as verify the consistency between plans and specification. The evaluation of the Contractor's submittals shall be based on the degree to which the submittal meets the requirements set forth in this document and the specifications.

13.2.4 Turfing:

1. Complete seeding specifications for establishing permanent and temporary turf on site areas not paved.
2. Topsoil and soil amendment specifications shall be responsive to existing soil (pH, texture, organic content) as established by soil tests.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

13.2.5 Architectural

1. Complete architectural drawings which are coordinated with the other engineering disciplines. Ensure that the plans are in compliance with the applicable codes. It will be the Contractor's responsibility to implement the comments generated from any design review submittal as well as verify the consistency between plans and specification. The evaluation of the Contractor's submittals shall be based on the degree to which the submittal meets the requirements set forth in this document and the specifications.

13.2.6 Structural Design

1. Final checked calculations for all structural members.
2. Final structural drawings coordinated with all other design disciplines.
3. The final structural drawings shall contain the following information as a set of general notes:

The allowable soil bearing value.

Frost depth.

The design stresses of structural materials used.

The design live loads used in the design of various portions of the structures.

The design wind speed, exposure, and importance factor.

The seismic values used in design.

4. All structural drawings and calculations shall be checked.

13.2.7 Plumbing

1. Final design drawings and calculations
2. Shop drawings

13.2.8 Fire Suppression System

1. A file of the input data used in the computer program to design the fire suppression system.
2. Final design drawings and calculations
3. Shop drawings

13.2.9 Heating, Ventilation and Air Conditioning (HVAC)

1. All HVAC calculations developed through the 75% submittals updated, expanded, finalized and completed.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

2. All HVAC drawings completed and finalized.
3. Shop drawings of all equipment and accessories as scheduled and as specified, complete with both "point-to-point" and "ladder type schematic" wiring diagrams for power and automatic controls, fully coordinated and combined into a complete coherent system, in accordance with the specified requirements of Section 15951.

13.2.10 Interior Electrical System

1. A coordination study with appropriate curves to show that all protective devices have been fully coordinated. Completed short circuit calculations for the entire electrical system shall also be provided. All equipment shall be identified by manufacturer's name and catalog number.
2. Complete voltage drop and lighting calculations. The voltage drop calculations shall use the same single line diagram as the short circuit calculations and shall show drops at the same locations as short circuit currents are shown. Lighting calculations (zonal cavity method for interior and point-to-point for exterior) shall be provided for all rooms and spaces and all exterior locations requiring illumination.
3. A completed version of the 75% design narrative submittal reflecting the design as submitted. The aforementioned calculations shall be included with the narrative. The calculations and coordination study shall have the seal of the registered engineer who performed the same affixed to the cover sheet.
4. All details completed. Congested areas which cannot be clearly shown at the drawing scale, shall be shown by expanded scale drawings.
5. Completed drawings thoroughly checked for discipline conflicts to insure that the proper electrical connections are provided for equipment of other disciplines and that there are no conflicts between the location of electrical equipment and equipment of other disciplines.
6. Completed drawings also checked for intradiscipline conflicts.

13.2.11 Exterior Electrical Distribution System

1. A coordination study with appropriate curves to show that ALL protective devices have been fully coordinated. Completed short circuit calculations for the entire electrical system shall also be provided. All equipment shall be identified by manufacturer's name and catalog number.
2. Complete voltage drop and lighting calculations. The voltage drop calculations shall use the same single line diagram as the short circuit calculations and shall show drops at the same locations as short circuit currents are shown. Lighting calculations (zonal cavity method for interior and point-to-point for exterior) shall be provided for all rooms and spaces and all exterior locations requiring illumination.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

3. A completed version of the 75% design narrative submittal reflecting the design as submitted. The aforementioned calculations shall be included with the narrative. The calculations and coordination study shall have the seal of the registered engineer who performed the same affixed to the cover sheet.
4. Completed drawings with all comments and any other changes incorporated.
5. All details completed. Congested areas which cannot be clearly shown at the drawing scale, shall be shown by expanded scale drawings.
6. Completed drawings thoroughly checked for discipline conflicts to insure that the proper electrical connections are provided for equipment of other disciplines that there are no conflicts between the location of electrical equipment and equipment of other disciplines.
7. Completed drawings also checked for intradiscipline conflicts.

13.2.12 Electronic Systems

1. Submit completed version of the 75% design drawings indicating low voltage systems, user diagrams, floor plans and details.

13.2.13 Project Score

Project score for sustainable design using the Sustainable Project Rating Tool. Also submit a detailed description of points received for each category.

13.2.14 Complete specifications for all sections

13.3 Design Complete Submittal (100%)

- 13.3.1 Submit complete drawings, specifications, calculations, and all other materials prepared during design, with New York State Architect/Engineer professional seal and signature.

14.0 DD FORM 1354 "TRANSFER AND ACCEPTANCE OF MILITARY REAL PROPERTY"

- 14.1 This document is a detailed listing of all real property by category description for the designed facility. It shall be accomplished at the completion of design and furnished with the Final Design Submittal.

15.0 RESIDENT MANAGEMENT SYSTEM (RMS)

- 15.1 The Contractor shall use the Government furnished software module entitled "Resident Management System (RMS)" to create the Submittal Register and the DD Form 1354 during the design phase of this contract. The data generated by the Contractor during the design phase will be used by the Contractor Quality Control Manager in the construction phase of the project. See Section 01312 QUALITY CONTROL SYSTEM (QCS) for a more detailed description of RMS.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

16.0 DESIGN REVIEW COMMENT SUBMISSION

- 16.1 All design review comments shall be electronically submitted for each phase through an electronic system called Dr Checks. The contractor through the same system shall evaluate all comments. This system provides the ability for all reviewers and contractors to track all comments and evaluations.
- 16.2 All comments shall be evaluated by the contractor and closed by the person who inputted the comment prior to the start of construction.

-- End of Section --

SECTION 01312

QUALITY CONTROL SYSTEM (QCS)

(NYD Version 09/01)

1.0 GENERAL

The Government will use the Resident Management System for Windows (RMS) to assist in its monitoring and administration of this contract. The Contractor shall use the Government-furnished Construction Contractor Module of RMS, referred to as QCS, to record, maintain, and submit various information throughout the contract period. This joint Government-Contractor use of RMS and QCS will facilitate electronic exchange of information and overall management of the contract. QCS provides the means for the Contractor to input, track, and electronically share information with the Government in the following areas:

Administration
Finances
Quality Control
Submittal Monitoring
Scheduling
Import/Export of Data

1.1 Correspondence and Electronic Communications

For ease and speed of communications, both Government and Contractor will, to the maximum extent feasible, exchange correspondence and other documents in electronic format. Correspondence, pay requests and other documents comprising the official contract record shall also be provided in paper format, with signatures and dates where necessary. Paper documents will govern, in the event of discrepancy with the electronic version.

1.2 Other Factors

Particular attention is directed to Section 00700 Contract Clauses Paragraph, "Schedules for Construction Contracts", and "Payments", Section 01320, "Project Schedule", Section 01330, SUBMITTAL PROCEDURES, and Section 01451, CONTRACTOR QUALITY CONTROL, which have a direct relationship to the reporting to be accomplished through QCS. Also, there is no separate payment for establishing and maintaining the QCS database; all costs associated therewith shall be included in the contract pricing for the work.

2.0 QCS SOFTWARE

QCS is a Windows-based program that can be run on a stand-alone personal computer or on a network. The Contractor shall be responsible after award of the construction contract to download the QCS software and User Manual from the Government's RMS Internet website ('<http://winrms.usace.army.mil>'). Prior to the Pre-Construction Conference, the Contractor

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

shall be responsible to download, install and use the latest version of the QCS software from the Government's RMS Internet Website. Any program updates of QCS will be made available to the Contractor via the Government RMS website as they become available.

3.0 SYSTEM REQUIREMENTS

The following listed hardware and software is the minimum system configuration that the Contractor shall have to run QCS:

Hardware

IBM-compatible PC with 200 MHz Pentium or higher processor

64+ MB RAM

4 GB hard drive disk space for sole use by the QCS system

3 ½ inch high-density floppy drive

Compact disk (CD) Reader

Color monitor

Laser printer compatible with HP Laserjet III or better, with minimum 4 MB installed memory.

Connection to the Internet, minimum 28 BPS.

Software

MS windows 95 or newer version operating system (MS windows NT 4.0 or newer is recommended)

Word Processing software- MS Word 97 or newer

Internet browser

The Contractor's computer system shall be protected by virus protection software that is regularly upgraded with all issued manufacturer's updates throughout the life of the contract.

Electronic mail (E-mail) compatible with MS outlook

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

4.0 RELATED INFORMATION

4.1 QCS User Guide

After contract award, the Contractor shall download the program and manual for the installation and use of QCS from the Government RMS Internet Website ('<http://winrms.usace.army.mil>').

5.0 CONTRACT DATABASE

Prior to the pre-construction conference, the Government shall provide the Contractor with basic contract award data to use for QCS. The Government will provide data updates to the Contractor as needed, generally by files attached to E-mail. These updates will generally consist of submittal reviews, correspondence status, QA comments, and other administrative and QA data.

6.0 DATABASE MAINTENANCE

The Contractor shall establish, maintain, and update data for the contract in the QCS database throughout the duration of the contract. The Contractor shall establish and maintain the QCS database at the Contractor's site office. Data updates to the Government shall be submitted by E-mail with file attachments, e.g., daily reports, schedule updates, payment requests. If permitted by the Contracting Officer, a data diskette or CD-ROM may be used instead of E-mail (see Paragraph DATA SUBMISSION VIA COMPUTER DISKETTE OR CD-ROM). The QCS database typically shall include current data on the following items:

6.1 Administration

6.1.1 Contractor Information

The database shall contain the Contractor's name, address, telephone numbers management staff, and other required items. Within 14 calendar days of receipt of QCS software from the Government, the Contractor shall deliver Contractor administrative data in electronic format via E-mail.

6.1.2 Subcontractor Information

The database shall contain the name, trade, address, phone numbers, and other required information for all subcontractors. A subcontractor must be listed separately for each trade to be performed. Each subcontractor/trade shall be assigned a unique Responsibility Code, provided in QCS. Within 14 calendar days of receipt of QCS software from the Government, the Contractor shall deliver subcontractor administrative data in electronic format via E-mail.

6.1.3 Correspondence

All Contractor correspondence to the Government shall be identified with serial number. Correspondence initiated by the Contractor's site office shall be prefixed with "S". Letters initiated by the Contractor's home (main) office shall be prefixed with "H". Letters shall be numbered starting from 0001. (e.g., H-0001 or S-0001). The Government's letters to the Contractor will be prefixed with "C".

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

6.1.4 Equipment

The Contractor's QCS database shall contain a current list of equipment planned for use or being used on the jobsite, including the most recent and planned equipment inspection dates.

6.1.5 Management Reporting

QCS includes a number of reports that Contractor management can use to track the status of the project. The value of these reports is reflective of the quality of the data input, and is maintained in the various sections of QCS. Among these reports are: Progress Payment Request worksheet, QA/QC comments, Submittal Register Status, Three-Phase Inspection checklists.

6.2 Finances

6.2.1 Pay Activity Data

The QCS database shall include a list of pay activities that the Contractor shall develop in conjunction with the construction schedule. The sum of all pay activities shall be equal to the total contract amount, including modifications. Pay activities shall be grouped by Contract Line Item Number (CLIN), and the sum of the activities shall equal the amount of each CLIN. CLINs may include multiple activities, but activities may be assigned to only one such CLIN Item. The total of all CLINs equals the Contract Amount.

6.2.2 Payment Requests

All progress payment requests shall be prepared using QCS. The Contractor shall complete the payment request worksheet and include it with the payment request. The work completed under the contract, measured as percent or as specific quantities, shall be updated at least monthly. After the update, the Contractor shall generate a payment request report using QCS. The Contractor shall submit the payment requests with supporting data by E-mail with file attachment(s). If permitted by the Contracting Officer, a data diskette may be used instead of E-mail. A signed paper copy of the approved payment request is also required, which shall govern in the event of discrepancy with the electronic version.

6.3 Quality Control (QC)

QCS provides a means to track implementation of the 3-phase QC Control System, prepare daily reports, identify and track deficiencies, document progress of work, and support other contractor QC requirements. The Contractor shall maintain this data on a daily basis. Entered data will automatically output to the QCS generated daily report. The Contractor shall provide the Government a Contractor Quality Control (CQC) Plan within the time required in Section 01451, CONTRACTOR QUALITY CONTROL. Within seven calendar days of Government acceptance, the Contractor shall submit a data diskette or CD-ROM reflecting the information contained in the accepted CQC Plan: schedule, pay activities, features of work, submittal register, QC requirements, and equipment list.

6.3.1 Daily Contractor Quality Control (CQC) Reports

QCS includes the means to produce the Daily COC Report. The Contractor may use other formats to record basic QC data. However, the Daily CQC Report generated by QCS shall be

1st BRIGADE BARRACKS FORT DRUM, NEW YORK

the Contractor's official report. Data from any supplemental reports by the Contractor shall be summarized and consolidated onto the QCS-generated Daily CCC Report. Daily CCC Reports shall be submitted as required by Section 01451, CONTRACTOR QUALITY CONTROL. Reports shall be submitted electronically to the Government using E-mail or diskette within 24 hours after the date covered by the report. Use of either mode of submittal shall be coordinated with the government representative. The Contractor shall also provide the Government a signed, printed copy of the daily CQC report.

6.3.2 Deficiency Tracking

The Contractor shall use QCS to track deficiencies. Deficiencies identified by the Contractor will be numerically tracked using QC punch list items. The contractor shall maintain a current log of its QC punch list items in the QCS database. The Government will log the deficiencies it has identified using its QA punch list items. The Government's QA punch list items will be included in its export file to the Contractor. The contractor will acknowledge receipt of these QA punch list items by specific number reference on the Daily CCC Report. The Contractor shall regularly update the correction status of both QC and QA punch list items.

6.3.3 Three-Phase Control Meetings

The Contractor shall maintain scheduled and actual dates and times of preparatory and initial control meetings in QCS.

6.3.4 Accident/Safety Tracking

The Government will issue safety comments, directions, or guidance whenever safety deficiencies are observed. The Government's safety comments will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of the safety comments. In addition, the Contractor shall utilize QCS to advise the Government of any accidents occurring on the jobsite. This brief supplemental entry is not to be considered as a substitute for completion of mandatory reports, e.g., ENG Form 3394 and OSHA Form 200.

6.3.5 Features of Work

The Contractor shall include a complete list of the features of work in the QCS database. A feature of work may be associated with multiple pay activities. However, each pay activity (see subparagraph "Pay Activity Data" of paragraph "Finances") will only be linked to a single feature of work.

6.3.6 QC Requirements

The Contractor shall develop and maintain a complete list of QC Testing, Transfer Property listings, Installed Property listings, and User Training requirements in QCS, all tied to individual pay activities. The Contractor shall update all data on these QC requirements as work progresses, and shall promptly provide this information to the Government via QCS.

6.4 Submittal Management

The contractor will initially be required to enter all required submittal information into QCS. Thereafter, the Contractor shall maintain a complete list of all submittals, including

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

completion of all data columns of ENG Form 4288, as required by Section 01330, SUBMITTAL PROCEDURES DESIGN/BUILD CONSTRUCTION. Dates on which submittals are received and returned by the Government will be included in its export file to the Contractor. The Contractor shall use QCS to track and transmit all submittals. ENG Form 4025, Submittal Transmittal Form, and Submittal Register Update, ENG Form 4288, shall be produced using QCS. RMS will be used to update, store and exchange submittal registers and transmittals, but will not be used for storage of actual submittals.

6.5 Schedule

The Contractor shall develop a construction schedule consisting of pay activities, in accordance with Section 00700 Contract Clauses "Schedules for Construction Contracts", or Section 01320, PROJECT SCHEDULE, as applicable. This schedule shall be input and maintained in the QCS database either manually or by using the Standard Data Exchange Format (SDEF) (see Section 01320 PROJECT SCHEDULE). The contractor shall be responsible for ensuring the SDEF is in the format required to upload the data to the QCS Module; otherwise, the contractor will be required to enter the data manually. The updated schedule data shall be included with each pay request submitted by the Contractor.

6.6 Import/Export of Data

QCS includes the ability to export Contractor data to the Government and to import Government-provided data.

7.0 IMPLEMENTATION

Contractor use of QCS as described in the preceding paragraphs is mandatory. The Contractor shall ensure that sufficient resources are available to maintain its QCS database, and to provide the Government with regular database updates. QCS shall be an integral part of the Contractor's management of quality control.

8.0 DATA SUBMISSION VIA COMPUTER DISKETTE OR CD-ROM

The Government-preferred method for Contractor's submission of updates, payment requests, correspondence and other data is by E-mail with file attachment(s). For locations where this is not feasible, the Contracting Officer may permit use of computer diskettes or CD-ROM for data transfer. Data on the disks or CDs shall be exported using the QCS built-in export function. If used, diskettes and CD-ROMs will be submitted in accordance with the following:

8.1 File Medium

The Contractor shall submit required data on 3-1/2" double-sided high-density diskettes formatted to hold 1.44 MB of data, capable of running under Microsoft Windows 95 or newer. Alternatively, CD-ROMs may be used. They shall conform to industry standards used in the United States. All data shall be provided in English.

8.2 Disk or CD-ROM Labels

The Contractor shall affix a permanent exterior label to each diskette and CD-ROM submitted. The label shall indicate in English, the QCS file name, full contract number,

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

contract name, project location, data date, name and telephone number of person responsible for the data.

8.3 File Names

The Government will provide the file names to be used by the Contractor with the QCS software.

9.0 WEEKLY SUBMISSION OF EXPORT FILES

The contractor shall, at a minimum, generate and submit weekly export file to the Gov't.

10.0 MONTHLY COORDINATION MEETING

The Contractor shall update the QCS database each workday. At least monthly, the Contractor shall generate and submit an export file to the Government with schedule update and progress payment request. As required in Section 00700 Contract Clauses "Payments", at least one week prior to submittal, the contractor shall meet with the Government representative to review the planned progress payment data submission for errors and omissions. The contractor shall make all required corrections prior to Government acceptance of the export file and progress payment request. Payment requests accompanied by incomplete or incorrect data submittals will be returned. The Government will not process progress payments until an acceptable QCS export file is received.

11.0 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the requirements of this specification. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. The QCS Module shall be completed to the satisfaction of the Contracting Officer prior to any contract payment (except for Bonds, and Insurance, as approved by the Contracting Officer).

----End of Section----

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

SECTION 01320

PROJECT SCHEDULE:
NETWORK ANALYSIS SYSTEM
(NYD Rev. 2/03)

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01300 SUBMITTAL PROCEDURES:

SD-07 Schedules

Initial Project Schedule; GA. Preliminary Project Schedule ;
GA. Periodic Schedule Updates; GA.

Four copies of the schedules showing codes, values, categories, numbers, items, etc., as required.

SD-08 Statements

Qualifications; FIO.

Documentation showing qualifications of personnel preparing schedule reports.

SD-09 Reports

Narrative Report; FIO. Schedule Reports; FIO.

Four copies of the reports showing numbers, descriptions, dates, float, starts, finishes, durations, sequences, etc., as required.

1.2 QUALIFICATIONS

The Contractor shall designate an authorized representative who shall be responsible for the preparation of all required project schedule reports. This person shall have previously created and reviewed computerized schedules. Qualifications of this individual shall be submitted to the Contracting Officer for review with the Preliminary Project Schedule submission.

PART 2 PRODUCTS (Not Applicable)

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

PART 3 EXECUTION

3.1 GENERAL

Pursuant to the Contract Clause, SCHEDULE FOR CONSTRUCTION CONTRACTS a Project Schedule as described below shall be prepared. The Contractor shall be responsible for scheduling of all procurement and construction activities as well as design activities if applicable to the project. The scheduling of construction shall be the responsibility of the Contractor. Contractor management personnel shall actively participate in its development. Subcontractors and suppliers working on the project should also contribute in developing and maintaining an accurate Project Schedule. The approved Project Schedule shall be used to measure the progress of the work, to aid in evaluating time extensions, and to provide the basis of all progress payments.

3.2 BASIS FOR PAYMENT

The schedule shall be the basis for measuring Contractor progress. Lack of an approved schedule or scheduling personnel shall result in an inability of the Contracting Officer to evaluate Contractor progress for the purposes of payment. Failure of the Contractor to provide all information, as specified below, shall result in the disapproval of the entire Project Schedule submission and the inability of the Contracting Officer to evaluate Contractor progress for payment purposes. In the case where Project Schedule revisions have been directed by the Contracting Officer and those revisions have not been included in the Project Schedule, then the Contracting Officer may hold retainage up to the maximum allowed by contract, each payment period, until revisions to the Project Schedule have been made.

3.3 PROJECT SCHEDULE

The computer software system utilized by the Contractor to produce the Project Schedule shall be capable of providing all requirements of this specification. Failure of the Contractor to meet the requirements of this specification shall result in the disapproval of the schedule. Manual methods used to produce any required information shall require approval by the Contracting Officer.

3.3.1 Use of the Critical Path Method

The Critical Path Method (CPM) of network calculation shall be used to generate the Project Schedule. The Contractor shall provide the Project Schedule in either the Precedence Diagram Method (PDM) or the Arrow Diagram Method (ADM).

3.3.2 Level of Detail Required

With the exception of the initial and preliminary schedule submission, the Project Schedule shall include an appropriate level of detail. Failure to develop or update the Project Schedule or provide data to the Contracting Officer at the appropriate level of detail, as specified by the Contracting Officer, shall result in the disapproval of the schedule. The Contracting Officer will use, but is not limited to, the following conditions to determine the appropriate level of detail to be used in the Project Schedule.

3.3.2.1 Activity Durations

Contractor submissions shall be required to follow the direction of the Contracting Officer regarding reasonable activity durations. Reasonable durations are those that allow the progress of activities to be

1st BRIGADE BARRACKS FORT DRUM, NEW YORK

accurately determined between payment periods. A rule of thumb, that the Contractor should use, is that less than 2 percent of all non-procurement activities' Original Durations shall be greater than 20 days.

3.3.2.2 Design and Permit Activities

The Contractor shall integrate design and permitting activities, including necessary conferences and follow-up actions and design package submission dates into the schedule if these items are applicable to the project.

3.3.2.3 Procurement Activities

Tasks related to the procurement of long lead materials or equipment shall be included as separate activities in the project schedule. Long lead materials and equipment are those materials that have a procurement cycle of over 90 days. Examples of procurement process activities include, but are not limited to: submittals, approvals, procurement, fabrication, delivery, installation, start-up, and testing.

3.3.2.4 Government Activities

Government and other agencies activities that could impact progress shall be shown. These activities include, but are not limited to: approvals, inspections, utility tie-in, Government Furnished Equipment (GFE) and notice to proceed for phasing requirements.

3.3.2.5 Workers Per Day

All activities shall have an estimate of the average number of workers per day that are expected to be used during the execution of the activity to produce the expected completion date. If no workers are required for an activity, in the case of activities related to procurement, for example, then the activity shall be identified as using zero workers per day. The workers per day information for each activity shall be identified by the Workers Per Day Code.

3.3.2.6 Responsibility

All activities shall be identified in the project schedule by the party responsible to perform the work. Responsibility includes, but is not limited to, the subcontracting firm, contractor work force, or government agency performing a given task. Activities shall not belong to more than one responsible party. The responsible party for each activity shall be identified by the Responsibility Code.

3.3.2.7 Work Areas

All activities shall be identified in the project schedule by the work area in which the activity occurs. Activities shall not be allowed to cover more than one work area. The work area of each activity shall be identified by the Work Area Code.

3.3.2.8 Modification or Claim Number

Any activity that is added or changed by contract modification or used to justify claimed time shall be identified by a mod or claim code that changed the activity. Activities shall not belong to more than one modification or claim item. The modification or claim number of each activity shall be identified by the

1st BRIGADE BARRACKS FORT DRUM, NEW YORK

Mod or Claim Number.

3.3.2.9 Bid Item

All activities shall be identified in the project schedule by the Bid Item to which the activity belongs. An activity shall not contain work in more than one bid item. The bid item for each appropriate activity shall be identified by the Bid Item Code.

3.3.2.10 Phase of Work

All activities shall be identified in the project schedule by the phases of work in which the activity occurs. Activities shall not be allowed to contain work in more than one phase of work. The project phase of each activity shall be by the unique Phase of Work Code.

3.3.2.11 Category of Work

All Activities shall be identified in the project schedule according to the category of work which best describes the activity. Category of work refers, but is not limited to, the procurement chain of activities including such items as submittals, approvals, procurement, fabrication, delivery, installation, start-up, and testing. The category of work for each activity shall be identified by the Category of Work Code.

3.3.2.12 Feature of Work

All activities shall be identified in the project schedule according to the feature of work to which the activity belongs. Feature of work refers, but is not limited to a work breakdown structure for the project. The feature of work for each activity shall be identified by the Feature of Work Code.

3.3.2.13 Critical Activities.

In addition to other activities as required to complete the project, the Progress schedule shall include the following as separate line activities:

- a. Submission and approval of mechanical/electrical layout drawings.
- b. Submission and approval of O & M Manuals.
- c. Submission and approval of as-built drawings.
- d. Submission and approval of 1354 data and installed equipment lists.
- e. Submission and approval of HVAC Testing and Balancing plan.
- f. HVAC Testing and Balancing and submission and approval of report.
- g. Submission and approval of HVAC Commissioning plan.
- h. HVAC Commissioning.
- i. Other Systems testing as required.
- j. Warranty Action Preparation
- k. Pre-final inspection.
- l. Correction of punchlist for pre-final inspection.
- m. Final inspection.

3.3.2.14. HVAC Testing, Balancing and Commissioning.

If this contract contains requirements for Heating, Ventilation and Air Conditioning Testing and Balancing and Commissioning, these activities must be allocated sufficient time and personnel

1st BRIGADE BARRACKS FORT DRUM, NEW YORK

resources by the Contractor so that they can be accomplished within time allowed for project completion. These activities are necessary to assure detection of any deficiencies in the HVAC Systems and avoid warranty callbacks. Included for guidance at the end of this section is a flow chart (Figures 1 and 2) showing major activities and their chronological relationship to each other and to the Notice to Proceed and Contract Completion points. They are for guidance only - the Contractor shall refer to applicable specification sections for actual requirements for these activities.

3.3.3 Scheduled Project Completion

The schedule interval shall extend from notice-to-proceed to the contract completion date.

3.3.3.1 Project Start Date

The schedule shall start no earlier than the date that the Notice to Proceed (NTP) was acknowledged.

The Contractor shall include as the first activity in the project schedule an activity called "Start Project". The "Start Project" activity shall have: a "ES" constraint, a constraint date equal to the date that the NTP was acknowledged, and a zero day duration.

3.3.3.2 Constraint of Last Activity

Completion of the last activity in the schedule shall be constrained by the contract completion date. Calculation on project updates shall be such that if the early finish of the last activity falls after the contract completion date, then the float calculation shall reflect a negative float on the critical path. The Contractor shall include as the last activity in the project schedule an activity call "End Project". The "End Project" activity shall have: a "LF" constraint, a constraint date equal to the completion date for the project, and a zero day duration.

3.3.3.3 Early Project Completion

In the event the project schedule shows completion, the project prior to the contract completion date, the Contractor shall identify those activities that have been accelerated and/or those activities that are scheduled in parallel to support the Contractor's "early" completion. Contractor shall specifically address each of the activities noted at every project schedule update period to assist the Contracting Officer to evaluate the Contractor's ability to actually complete prior to the contract period.

3.3.4 Interim Completion Dates

Contractually specified interim completion dates shall also be constrained to show negative float if the early finish date of the last activity in that phase falls after the interim completion date.

3.3.4.1 Start Phase

The Contractor shall include as the first activity for a project phase an activity called "Start Phase X" where "X" refers to the phase of work. The "Start Phase X" activity shall have: a "ES" constraint, a constraint date equal to the date that the NTP was acknowledged, and a zero day duration.

3.3.4.2 End Phase

1st BRIGADE BARRACKS FORT DRUM, NEW YORK

The Contractor shall include as the last activity in a project phase an activity called "End Phase X" where "X" refers to the phase of work. The "End Phase X" activity shall have: a "LF" constraint, a constraint date equal to the completion date for the project, and a zero day duration.

3.3.4.3 Phase X

The Contractor shall include a hammock type activity for each project phase called "Phase X" where "X:" refers to the phase of work. The "Phase X" activity shall be logically tied to the earliest and latest activities in the phase.

3.3.5 Default Progress Data Disallowed

Actual Start and Finish dates shall not be automatically updated by default mechanisms that may be included in CPM scheduling software systems. Actual Start and Finish dates on the CPM schedule shall match those dates provided from Contractor Quality Control Reports. Failure of the Contractor to document the Actual Start and Finish dates on the Daily Quality Control report for every in progress or completed activity and insure that the data contained on the Daily Quality Control reports is the sole basis for schedule updating shall result in the disapproval of the Contractor's schedule and the inability of the Contracting Officer to evaluate Contractor progress for payment purposes.

3.3.6 Out-of-Sequence Progress

Activities that have posted progress without predecessors being completed (Out-of-Sequence Progress) shall be allowed only by the case-by-case approval of the Contracting Officer. The Contracting Officer may direct that changes in schedule logic be made to correct any or all out-of-sequence work.

3.3.7 Extended Non-Work Periods

Designation of Holidays to account for non-work periods of over 5 days shall not be allowed. Non-work periods of over 5 days shall be identified by addition of activities that represent the delays. Modifications to the logic of the project schedule shall be made to link those activities that may have been impacted by the delays to the newly added delay activities.

3.3.8 Negative Lags

Lag durations contained in the project schedule shall not have a negative value.

3.4 PROJECT SCHEDULE SUBMISSIONS

The Contractor shall provide the submissions as described below. The data disk, reports, and network diagrams required for each submission are contained in paragraph SUBMISSION REQUIREMENTS.

3.4.1 Preliminary Project Schedule Submission

The Preliminary Project Schedule, defining the Contractor's planned operations for the first 60 calendar days shall be submitted for approval within 10 calendar days after Notice to Proceed is acknowledged.

1st BRIGADE BARRACKS FORT DRUM, NEW YORK

The approved preliminary schedule shall be used for payment purposes not to exceed 60 calendar days after Notice to Proceed.

3.4.2 Initial Project Schedule Submission

The Initial Project Schedule shall be submitted for approval within 40 calendar days after Notice to Proceed. The schedule shall provide a reasonable sequence of activities which represent work through the entire project and shall be at a reasonable level of detail.

3.4.3 Periodic Schedule Updates

Based on the result of progress meetings, specified in "Periodic Progress Meetings," the Contractor shall submit periodic schedule updates. These submissions shall enable the Contracting Officer or to assess Contractor's progress. If the Contractor fails or refuses to furnish the information and project schedule data, which in the judgment of the Contracting Officer or authorized representative, is necessary for verifying the contractor's progress, the Contractor shall be deemed not to have provided an estimate upon which progress payment may be made.

3.4.4 Standard Activity Coding Dictionary

The Contractor shall submit, with the Initial Project Schedule, a coding scheme that shall be used throughout the project for all activity codes contained in the schedule. The coding scheme submitted shall list the values for each activity code category and translate those values into project specific designations. For example, a Responsibility Code Value, "ELE", may be identified as "Electrical Subcontractor." Activity code values shall represent the same information throughout the duration of the contract. Once approved with the Initial Project Schedule submission, changes to the activity coding scheme must be approved by the Contracting Officer's Representative.

3.5 SUBMISSION REQUIREMENTS

The following items shall be submitted by the Contractor for the initial submission, and every periodic project schedule update throughout the life of the project:

3.5.1 Data Disks

Two data disks containing the project schedule shall be provided. Data on the disks shall be in the format specified in Appendix A, " Standard Data Exchange Format".

3.5.1.1 File Medium

Required data shall be submitted on CD's, formatted to hold 700 MB of data, under the word operating system.

3.5.1.2 Disk Label

A permanent exterior label shall be affixed to each disk submitted. The label shall indicate the type of schedule (Initial, Update, or Change), full contract number, project name, project location, data date,

1st BRIGADE BARRACKS FORT DRUM, NEW YORK

name and telephone number or person responsible for the schedule.

3.5.1.3 File Name

Each file submitted shall have a name related to either the schedule data date, project name, or contract number. The Contractor shall develop a naming convention that will insure that the names of the files submitted are unique. The Contractor shall submit the file naming convention to the Contracting Officer for approval.

3.5.2 Narrative Report

A Narrative Report shall be provided with each update of the project schedule. This report shall be provided as the basis of the Contractor's progress payment request. The Narrative Report shall include: a description of activities along the 4 most critical paths, a description of current and anticipated problem areas or delaying factors and their impact, and an explanation of corrective actions taken.

3.5.3 Approved Changes Verification

Only project schedule changes that have been previously approved by the Contracting Officer shall be included in the schedule submission. The Narrative Report shall specifically reference, on an activity by activity basis, all changes made since the previous period and relate each change to documented, approved schedule changes.

3.5.4 Schedule Reports

The format for each activity for the schedule reports listed below shall contain: Activity Numbers, Activity Description, Original Duration, Remaining Duration, Early Start Date, Early Finish Date, Late Start Date, Late Finish Date, Total Float. Actual Start and Actual Finish Dates shall be printed for those activities in-progress or completed.

3.5.4.1 Activity Report

A list of all activities sorted according to activity number or "I-NODE" AND "J-NODE" and then sorted according to Early Start Date. For completed activities the Actual Start Date shall be used as the secondary sort.

3.5.4.2 Logic Report

A list of Preceding and Succeeding activities for every activity in ascending order by activity number and then sorted according to Early Start Date. For completed activities the Actual Start Date shall be used as the secondary sort.

3.5.4.3 Total Float Report

A list of all activities sorted in ascending order of total float. Activities which have the same amount of total float shall be listed in ascending order of Early Start Dates.

1st BRIGADE BARRACKS FORT DRUM, NEW YORK

3.5.4.4 Earnings Report

A compilation of the Contractor's Total Earnings on the project from the Notice to Proceed until the most recent Monthly Progress Meeting. This report shall reflect the Earnings of specific activities based on the agreements made in the field and approved between the Contractor and Contracting Officer at the most recent Monthly Progress Meeting. Provided that the Contractor has provided a complete schedule update, this report shall serve as the basis of determining Contractor Payment. Activities shall be grouped by bid item and sorted by activity numbers. This report shall: sum all activities in a bid item and provide a bid item percent; complete and sum all bid items to provide a total project percent complete. The printed report shall contain, for each activity: [Activity Number] [or] ["i-node" and "j-node"], Activity Description, Original Budgeted Amount, Total Quantity, Quantity to Date, Percent Complete (based on cost), Earnings to Date.

3.5.4.5 Labor Loading.

For each activity shown on the logic report list the total amount of work required for the activity in man-hours, the number of workers assigned to the activity, the expected production rate for a worker, and the length of time (in work days) required to render the expected completion date for the activity. Completion dates on this report must agree with those on the logic report.

3.5.5 Network Diagram

The network diagram shall be required on the initial schedule submission and on bi-monthly (60 days) schedule update submissions. In addition to other submission requirements, a single mylar reproduceable 20 inch by 30 inch size shall be submitted. The diagram shall also The network diagram shall depict and display the order and interdependence of activities and the sequence in which the work is to be accomplished. The Contracting Officer will use, but is not limited to, the following conditions to review compliance with this paragraph:

3.5.5.1 Continuous Flow

Diagrams shall show a continuous flow from left to right with no arrows from right to left. The activity or event number, description, duration, and estimated earned value shall be shown on the diagram.

3.5.5.2 Project Milestone Dates

Dates shall be shown on the diagram for start of project, any contract required interim completion dates, and contract completion dates.

3.5.5.3 Critical Path

The critical path shall be clearly shown.

3.5.5.4 Banding

Activities shall be grouped to assist in the understanding of the activity sequence. Typically, this flow will group activities by category of work, work area and/or responsibility.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

3.5.5.5 S-Curves

Earnings curves showing projected early and late earnings and earnings to date.

3.6 PERIODIC PROGRESS MEETINGS

Progress meetings to discuss payment shall include a monthly on- site meeting or other regular intervals mutually agreed to at the preconstruction conference. During this meeting the Contractor will describe, on an activity by activity basis, all proposed revisions and adjustments to the project schedule required to reflect the current status of the project. The Contracting Officer will approve activity progress, proposed revisions, and adjustments as appropriate.

3.6.1 Meeting Attendance

The Contractor's Project Manager and Scheduler shall attend the regular progress meeting.

3.6.2 Update Submission Following Progress Meeting

A complete update of the project schedule containing all approved progress, revisions, and adjustments, based on the regular progress meeting, shall be submitted not later than 4 working days after the monthly progress meeting.

3.6.3 Progress Meeting Contents

Update information, including Actual Start Dates, Actual Finish Dates, Remaining Durations, and Cost to Date shall be subject to the approval of the Contracting Officer. The following minimum set of items which the Contractor shall address, on an activity by activity basis, during each progress meeting.

3.6.3.1 Start and Finish Dates

The Actual Start and Actual Finish dates for each activity currently in-progress or completed activities.

3.6.3.2 Time Completion

The estimated Remaining Duration for each activity in-progress. Time-based progress calculations must be based on Remaining Duration for each activity.

3.6.3.3 Cost Completion

The earnings for each activity started. Payment shall be based on earnings for each in-progress or completed activity. Payment for individual activities shall not be made for work that contains quality defects. A portion of the overall project amount may be retained based on delays of activities.

3.6.3.4 Logic Changes

All logic changes pertaining to Notice to Proceed on change orders, change orders to be incorporated into the schedule, contractor proposed changes in work sequence, corrections to schedule logic for out-of-sequence progress, lag durations, and other changes that have been made pursuant to contract provisions shall be specifically identified and discussed.

1st BRIGADE BARRACKS FORT DRUM, NEW YORK

3.6.3.5 Other Changes

Other changes required due to delays in completion of any activity or group of activities are those delays beyond the Contractors control such as strikes and unusual weather. Also included are delays encountered due to submittals, Government Activities, deliveries or work stoppage which makes re-planning the work necessary, and when the schedule does not represent the actual prosecution and progress of the work.

3.7 REQUESTS FOR TIME EXTENSIONS

In the event the Contractor requests an extension of the contract completion date, he shall furnish such justification, project schedule data and supporting evidence as the Contracting Officer may deem necessary for a determination as to whether or not the Contractor is entitled to an extension of time under the provisions of the contract. Submission of proof of delay, based on revised activity logic, duration, and costs (updated to the specific date that the delay occurred) is obligatory to any approvals.

3.7.1 Justification of Delay

The project schedule must clearly display that the Contractor has used, in full, all the float time available for the work involved with this request. The Contracting Officer's determination as to the number of allowable days of contract extension, shall be based upon the project schedule updates in effect for the time period in question and other factual information. Actual delays that are found to be caused by the Contractor's own actions, which result in the extension of the schedule, shall not be a cause for a time extension to the contract completion date.

3.7.2 Submission Requirements

The Contractor shall submit a justification for each request for a change in the contract completion date of under two weeks based upon the most recent schedule update at the time of the Notice to Proceed or constructive direction issued for the change. Such a request shall be in accordance with the requirements of other appropriate Contract Clauses and shall include, as a minimum:

- a. A list of affected activities, with their associated project schedule activity number.
- b. A brief explanation of the causes of the change.
- c. An analysis of the overall impact of the changes proposed.
- d. A sub-network of the affected area.

Activities impacted in each justification for change shall be identified by a unique activity code contained in the required data file.

3.7.3 Additional Submission Requirements

For any request for time extension for over 2 weeks, the Contracting Officer may request an interim update with revised activities for a specific change request. The Contractor shall provide this disk within 4 days of the Contracting Officer's request.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

3.8 DIRECTED CHANGES

If Notice to Proceed (NTP) is issued for changes prior to settlement of price and/or time, the Contractor shall submit proposed schedule revisions to the Contracting Officer within 2 weeks of the NTP being issued. The proposed revisions to the schedule will be approved by the Contracting Officer prior to inclusion of those changes within the project schedule. If the Contractor fails to submit the proposed revisions, the Contracting Officer may furnish the Contractor suggested revisions to the project schedule. The Contractor shall include these revisions in the project schedule until the Contractor submits revisions, and final changes and impacts have been negotiated. If the Contractor has any objections to the revisions furnished by the Contracting Officer, then the Contractor shall advise the Contracting Officer within 2 weeks of receipt of the revisions. Regardless of the objections, the Contractor will continue to update their schedule with the Contracting Officer's revisions until a mutual agreement in the revisions may be made. If the Contractor fails to submit alternative revisions within 2 weeks of receipt of the Contracting Officer's proposed revisions, the Contractor will be deemed to have concurred with the Contracting Officer's proposed revisions. The proposed revisions will then be the basis for an equitable adjustment for performance of the work.

3.9 OWNERSHIP OF FLOAT

Float available in the schedule, at any time, shall not be considered for the exclusive use of either the Government or the Contractor.

---End of Section---

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

SECTION 01330

**SUBMITTAL PROCEDURES
DESIGN/BUILD CONSTRUCTION
(NY Dist Rev. 8/01)**

PART 1 GENERAL

1.1 SUMMARY

This section covers procedures to be used in making submittals for construction. The Contractor's Quality Control Representative shall coordinate and control submittals.

1.1 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

1.1.1 Design Submittals

Administrative Contracting Officer review is required for all design. The Government will review all 75% and 95% design submittals for conformance with the technical requirements of the solicitation. Section 01012, Design After Award, covers the design submittal and review process in detail.

1.1.2 Construction Submittals

1.1.2.1 Submittal Definitions

The submittals described below are those required and further described in other sections of the specifications. Submittals required by the CONTRACT CLAUSES and other non-technical parts of the contract are not included in this section.

SD-01 Data

Work to be Performed by Contractor

Submittal Registers

Submittals which provide calculations, descriptions, or documentation regarding the work.

SD-04 Drawings

Submittals which graphically show relationship of various components of the work, schematic diagrams of systems, details of fabrication, layouts of particular elements, connections, and other relational aspects of the work.

As-Built Drawings

Equipment Layout Drawings

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

SD-06 Instructions

Preprinted material describing installation of a product, system or material, including special notices and material safety data sheets, if any, concerning impedances, hazards, and safety precautions.

SD-07 Schedules

Progress Schedules

Schedules for Construction Contracts

Contractor Prepared Network Analysis

Tabular lists showing location, features, or other pertinent information regarding products, materials, equipment, or components to be used in the work.

SD-08 Statements

Accident Prevention Plan

Hazard Analysis Plan

Environmental Protection Plan

Submittal Procedures

A document, required of the Contractor, or through the Contractor, from a supplier, installer, manufacturer, or other lower tier Contractor, the purpose of which is to confirm the quality or orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel, qualifications, or other verifications of quality.

SD-09 Reports

Reports of inspections or tests, including analysis and interpretation of test results. Each report shall be properly identified. Test methods used shall be identified and test results shall be recorded.

SD-13 Certificates

Statements signed by responsible official of a manufacturer of a product, system or material, attesting that the product, system or material meets specified requirements.

SD-14 Samples

Samples including both fabricated and unfabricated physical examples of products, and units of work as complete units or as portions of units of work.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

SD-18 Records

Documentation to record compliance with technical or administrative requirements.

SD-19 Operation and Maintenance Manuals

Data which forms a part of an operation and maintenance manual.

1.1.2.2 Designer of Record Approval.

Designer of Record approval is required for extensions of design, critical materials, any deviations from the solicitation, the accepted proposal, or the completed design, equipment whose compatibility with the entire system must be checked, and other items as designated by the Contracting Officer's Representative. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction", they are considered to be "shop drawings". The Contractor shall also provide the Government the number of copies designated hereinafter of all Designer of Record approved submittals. The Government may review any or all Designer of Record approved submittals for conformance to the Solicitation and Accepted Proposal. The Government will review all submittals designated as deviating from the Solicitation or Accepted Proposal, as described below.

1.1.2.3 Government Approved Construction Submittals.

Administrative Contracting Officer approval is required for any deviations from the Solicitation or Accepted Proposal and other items as designated by the Contracting Officer's Representative. Within the terms of the Section 00700 Contract Clauses "Specifications and Drawings for Construction", they are considered to be "shop drawings".

1.1.2.4 Government Reviewed Extension of Design.

Government review is required for extension of design construction submittals, used to define contract conformity, and for deviation from the completed design. Review will be only for conformance with the contract requirements. Included are only those construction submittals for which the Designer of Record design documents do not include enough detail to ascertain contract compliance. Government review is not required for extensions of design such as structural steel or reinforcement shop drawings.

1.1.2.5 Information Only.

All submittals not requiring Designer of Record or Government approval will be for information only. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above.

1.2 GOVERNMENT REVIEWED OR "APPROVED" SUBMITTALS

The Contracting Officer's Representative conformance review or approval of submittals shall not be construed as a complete check, but will indicate only that the design, general method of construction, materials, detailing and other information appear to meet the Solicitation and Accepted Proposal. Government Review or approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor, under the Design and CQC requirements of this contract, is responsible for design, dimensions, all design extensions,

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

such as the design of adequate connections and details, etc., and the satisfactory construction of all work. After submittals have been reviewed for conformance or approved, as applicable, by the Contracting Officer's Representative, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.3 DISAPPROVED SUBMITTALS

The Contractor shall make all corrections required by the Contracting Officer's Representative, obtain the Designer of Record's approval, when applicable, and promptly furnish a corrected submittal in the form and number of copies specified for the initial submittal. Any "information only" submittal found to contain errors or unapproved deviations from the Solicitation or Accepted Proposal shall be resubmitted as one requiring "approval" action, requiring both Design of Record and Government approval. If the Contractor considers any correction indicated by the Government on the submittals to constitute a change to the contract, it shall promptly provide a notice in accordance with the Section 00700 Contract Clauses "Changes" to the Contracting Officer's Representative.

1.4 WITHHOLDING OF PAYMENT

No payment for materials incorporated in the work will be made if all required Design of Record or required Government approvals have not been obtained. No payment will be made for any materials incorporated into the work for any conformance review submittals or information only submittals found to contain errors or deviations from the Solicitation or Accepted Proposal.

PART 2 PRODUCTS

2.1 DESIGN SUBMITTALS

The Contractor shall make design submittals in accordance with Section 01012 entitled "DESIGN AFTER AWARD".

2.2 CONSTRUCTION SUBMITTALS

2.2.1 General

The Contractor shall make submittals as required by the specifications. The Contracting Officer's Representative may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, the Contractor's Quality Control (CQC) representative, and the Designer of Record, as applicable, above shall check, approve and stamp, sign, and date each item, indicating action taken. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring Government approval shall be scheduled

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

2.2.2 Submittal Register (ENG Form 4288)

The Contractor's Designer(s) of Record shall develop a complete list of submittals during design. The Designer of Record shall identify required submittals in the specifications. The contractor shall generate and update the ENG Form 4288 Submittal Register. If QCS is used on this project the submittal register is required to be entered and updated in QCS. If not, and specifications used are in Specs-In-Tact format, the submittal register shall be generated using the Spec-in-Tact program, and updated using the electronic files exported from Specs-in-Tact. If neither RMS nor Specs-in-Tact are used, the contractor shall generate and update the submittal register electronically in another program.

The Submittal register will be included in the 95% design submittal. The list may not be all inclusive and additional submittals may be required by other parts of the contract. The Contractor is required to complete ENG Form 4288 (including columns "a" through "r") and submit to the Contracting Officer for approval within 30 calendar days after approved date of beginning of construction. The approved submittal register will serve as a scheduling document for submittals and will be used to control submittal actions throughout the contract period. The submit dates and need dates used in the submittal register shall be coordinated with dates in the Contractor prepared progress schedule. Updates to the submittal register showing the Contractor action codes and actual dates with Government action codes and actual dates shall be submitted monthly or until all submittals have been satisfactorily completed. When the progress schedule is revised, the submittal register shall also be revised and both submitted for approval.

2.2.3 Scheduling

Contractor shall schedule those submittals covering component items forming a system or items that are interrelated to be coordinated and submitted concurrently. Also, schedule Certifications to be submitted with the pertinent drawings. Allow adequate time (a minimum of 30 calendar days exclusive of mailing time) and indicate on the register for Government review or approval. No delay damages or time extensions will be allowed for time lost in late submittals.

2.2.4 Transmittal Form (ENG Form 4025)

The transmittal form (ENG Form 4025) shall be for transmitting both Government approved and information only submittals in accordance with the instructions on the reverse side of the form. The Government will furnish blank forms to the Contractor. Properly complete this form by filling out all the heading blank spaces and identifying each item submitted. Exercise special care to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

2.2.5 Submittal Procedure

Make submittals as follows:

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

2.2.5.1 Procedures

At the Quality Control Coordination meeting, or pre-work conference, the Contractor shall ascertain the name and address of each individual, agency, or firm who is designated to normally receive items for approval, for information or samples. The contractor shall complete ENG Form 4025, entering each item requiring a separate approval action as a separate item on the form, for each transmittal. A transmittal may consist of one or more 4025 sheets. The transmittal, consisting of ENG Form 4025 plus all applicable submittals, is then sent to the appropriate individual. On critical items the Contractor is encouraged to confirm receipt via telephone. The Contractor shall submit to the Government four copies of submittals for approval or conformance review and one for items for information.

2.2.5.2 Deviations

On submittals for which the Contractor requests proposed deviations, check the column "variation" of ENG Form 4025. The Contractor shall set forth in writing the reason for any deviations and annotate such deviations on the submittal. As stated above, the Contractor's Designer of Record's approval is required for any proposed deviation. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

2.2.6 Control of Submittals

The Contractor shall carefully control its procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register" so the material needed date is complied with.

2.2.7 Government Conformance Review and Approved Submittals

Upon completion of review of submittals requiring Government approval, the Government will identify the submittals as having received approval by so stamping and dating. The Contracting Officer's Representative will retain 2 copies of the submittal and return 2 copies of the submittal to the Contractor. If the Government performs a conformance review of other Designer of Record approved submittals, the submittals will be so identified and returned, as described above.

2.2.8 Information Only Submittals

Normally the Government will not return submittals for information only. No action of the Contracting Officer's Representative is required on information only submittals. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications and will not prevent the Contracting Officer's Representative from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

2.2.9 Stamps

Stamps used by the Contractor's Designer of Record and the Contractor's designed Quality Control person on the submittal data to certify that the submittal meets contract requirements shall be similar to the following (use two stamps for submittals reviewed by both):

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

CONTRACTOR

(Firm Name)

___ Approval

___ Approval with corrections as noted on
___ submittal data and /or attached sheet(s)

SIGNATURE: _____

TITLE: (DESIGNER OF RECORD)

DATE: _____

---End of Section---

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

SECTION 01355

ENVIRONMENTAL PROTECTION

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

U.S. AIR FORCE (USAF)

AFI 32-1053 Pest Management Program

U.S. ARMY (DA)

AR 200-5 Pest Management

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

33 CFR 328 Definitions

40 CFR 68 Chemical Accident Prevention Provisions

40 CFR 152 - 186 Pesticide Programs

40 CFR 260 Hazardous Waste Management System: General

40 CFR 261 Identification and Listing of Hazardous Waste

40 CFR 262 Standards Applicable to Generators of Hazardous Waste

40 CFR 279 Standards for the Management of Used Oil

40 CFR 302 Designation, Reportable Quantities, and Notification

40 CFR 355 Emergency Planning and Notification

49 CFR 171 - 178 Hazardous Materials Regulations

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (1996) U.S. Army Corps on Engineers Safety and Health Requirements Manual

WETLAND MANUAL Corps of Engineers Wetlands Delineation Manual Technical Report Y-87-1

1st BRIGADE BARRACKS FORT DRUM, NEW YORK

1.2 DEFINITIONS

1.2.1 Environmental Pollution and Damage

Environmental pollution and damage is the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade the environment aesthetically, culturally and/or historically.

1.2.2 Environmental Protection

Environmental protection is the prevention/control of pollution and habitat disruption that may occur to the environment during construction. The control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.2.3 Contractor Generated Hazardous Waste

Contractor generated hazardous waste means materials that, if abandoned or disposed of, may meet the definition of a hazardous waste. These waste streams would typically consist of material brought on site by the Contractor to execute work, but are not fully consumed during the course of construction. Examples include, but are not limited to, excess paint thinners (i.e. methyl ethyl ketone, toluene etc.), waste thinners, excess paints, excess solvents, waste solvents, and excess pesticides, and contaminated pesticide equipment rinse water.

1.2.4 Installation Pest Management Coordinator

Installation Pest Management Coordinator (IPMC) is the individual officially designated by the Installation Commander to oversee the Installation Pest Management Program and the Installation Pest Management Plan.

1.2.5 Project Pesticide Coordinator

The Project Pesticide Coordinator (PPC) is an individual that resides at a Civil Works Project office and that is responsible for oversight of pesticide application on Project grounds.

1.2.6 Land Application for Discharge Water

The term "Land Application" for discharge water implies that the Contractor shall discharge water at a rate that allows the water to percolate into the soil. No sheeting action, soil erosion, discharge into storm sewers, discharge into defined drainage areas, or discharge into the "waters of the United States" shall occur. Land Application shall be in compliance with all applicable Federal, State, and local laws and regulations.

1.2.7 Pesticide

Pesticide is defined as any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, or intended for use as a plant regulator, defoliant or desiccant.

1st BRIGADE BARRACKS FORT DRUM, NEW YORK

1.2.8 Pests

The term "pests" means arthropods, birds, rodents, nematodes, fungi, bacteria, viruses, algae, snails, marine borers, snakes, weeds and other organisms (except for human or animal disease-causing organisms) that adversely affect readiness, military operations, or the well-being of personnel and animals; attack or damage real property, supplies, equipment, or vegetation; or are otherwise undesirable.

1.2.9 Surface Discharge

The term "Surface Discharge" implies that the water is discharged with possible sheeting action and subsequent soil erosion may occur. Waters that are surface discharged may terminate in drainage ditches, storm sewers, creeks, and/or "waters of the United States" and would require a permit to discharge water from the governing agency.

1.2.10 Waters of the United States

All waters which are under the jurisdiction of the Clean Water Act, as defined in 33 CFR 328.

1.2.11 Wetlands

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, and bogs. Official determination of whether or not an area is classified as a wetland must be done in accordance with WETLAND MANUAL.

1.3 GENERAL REQUIREMENTS

The Contractor shall minimize environmental pollution and damage that may occur as the result of construction operations. The environmental resources within the project boundaries and those affected outside the limits of permanent work shall be protected during the entire duration of this contract. The Contractor shall comply with all applicable environmental Federal, State, and local laws and regulations. The Contractor shall be responsible for any delays resulting from failure to comply with environmental laws and regulations.

1.4 SUBCONTRACTORS

The Contractor shall ensure compliance with this section by subcontractors.

1.5 PAYMENT

No separate payment will be made for work covered under this section. The Contractor shall be responsible for payment of fees associated with environmental permits, application, and/or notices obtained by the Contractor. All costs associated with this section shall be included in the contract price. The Contractor shall be responsible for payment of all fines/fees for violation or non-compliance with Federal, State, Regional and local laws and regulations.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

1.6 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Environmental Protection Plan; G,
The environmental protection plan.

1.7 ENVIRONMENTAL PROTECTION PLAN

Prior to commencing construction activities or delivery of materials to the site, the Contractor shall submit an Environmental Protection Plan for review and approval by the Contracting Officer. The purpose of the Environmental Protection Plan is to present a comprehensive overview of known or potential environmental issues which the Contractor must address during construction. Issues of concern shall be defined within the Environmental Protection Plan as outlined in this section. The Contractor shall address each topic at a level of detail commensurate with the environmental issue and required construction task(s). Topics or issues which are not identified in this section, but which the Contractor considers necessary, shall be identified and discussed after those items formally identified in this section. Prior to submittal of the Environmental Protection Plan, the Contractor shall meet with the Contracting Officer for the purpose of discussing the implementation of the initial Environmental Protection Plan; possible subsequent additions and revisions to the plan including any reporting requirements; and methods for administration of the Contractor's Environmental Plans. The Environmental Protection Plan shall be current and maintained onsite by the Contractor.

1.7.1 Compliance

No requirement in this Section shall be construed as relieving the Contractor of any applicable Federal, State, and local environmental protection laws and regulations. During Construction, the Contractor shall be responsible for identifying, implementing, and submitting for approval any additional requirements to be included in the Environmental Protection Plan.

1.7.2 Contents

The environmental protection plan shall include, but shall not be limited to, the following:

- a. Name(s) of person(s) within the Contractor's organization who is (are) responsible for ensuring adherence to the Environmental Protection Plan.
- b. Name(s) and qualifications of person(s) responsible for manifesting hazardous waste to be removed from the site, if applicable.
- c. Name(s) and qualifications of person(s) responsible for training the Contractor's environmental protection personnel.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- d. Description of the Contractor's environmental protection personnel training program.
- e. An erosion and sediment control plan which identifies the type and location of the erosion and sediment controls to be provided. The plan shall include monitoring and reporting requirements to assure that the control measures are in compliance with the erosion and sediment control plan, Federal, State, and local laws and regulations. A Storm Water Pollution Prevention Plan (SWPPP) may be substituted for this plan.
- f. Drawings showing locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on the site.
- g. Traffic control plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather. Plan shall include measures to minimize the amount of mud transported onto paved public roads by vehicles or runoff.
- h. Work area plan showing the proposed activity in each portion of the area and identifying the areas of limited use or nonuse. Plan should include measures for marking the limits of use areas including methods for protection of features to be preserved within authorized work areas.
- i. Drawing showing the location of borrow and spoil areas.
- j. The Spill Control plan shall include the procedures, instructions, and reports to be used in the event of an unforeseen spill of a substance regulated by 40 CFR 68, 40 CFR 302, 40 CFR 355, and/or regulated under State or Local laws and regulations. The Spill Control Plan supplements the requirements of EM 385-1-1. This plan shall include as a minimum:
 - 1. The name of the individual who will report any spills or hazardous substance releases and who will follow up with complete documentation. This individual shall immediately notify the Contracting Officer and Facility Fire Department in addition to the legally required Federal, State, and local reporting channels (including the National Response Center 1-800-424-8802) if a reportable quantity is released to the environment. The plan shall contain a list of the required reporting channels and telephone numbers. Only the Fort Drum Environmental Branch will contact NRC for spills on Fort Drum.
 - 2. The name and qualifications of the individual who will be responsible for implementing and supervising the containment and cleanup.
 - 3. Training requirements for Contractor's personnel and methods of accomplishing the training.
 - 4. A list of materials and equipment to be immediately available at the job site, tailored to cleanup work of the potential hazard(s) identified.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

5. The names and locations of suppliers of containment materials and locations of additional fuel oil recovery, cleanup, restoration, and material-placement equipment available in case of an unforeseen spill emergency.
6. The methods and procedures to be used for expeditious contaminant cleanup.
- k. A non-hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris. The plan shall include schedules for disposal. The Contractor shall identify any subcontractors responsible for the transportation and disposal of solid waste. Licenses or permits shall be submitted for solid waste disposal sites that are not a commercial operating facility. Evidence of the disposal facility's acceptance of the solid waste shall be attached to this plan during the construction. The Contractor shall attach a copy of each of the Non-hazardous Solid Waste Diversion Reports to the disposal plan. The report shall be submitted on the first working day after the first quarter that non-hazardous solid waste has been disposed and/or diverted and shall be for the previous quarter (e.g. the first working day of January, April, July, and October). The report shall indicate the total amount of waste generated and total amount of waste diverted in cubic meters or tons along with the percent that was diverted.
- l. A recycling and solid waste minimization plan with a list of measures to reduce consumption of energy and natural resources. The plan shall detail the Contractor's actions to comply with and to participate in Federal, State, Regional, and local government sponsored recycling programs to reduce the volume of solid waste at the source.
- m. An air pollution control plan detailing provisions to assure that dust, debris, materials, trash, etc., do not become air borne and travel off the project site.
- n. A contaminant prevention plan that: identifies potentially hazardous substances to be used on the job site; identifies the intended actions to prevent introduction of such materials into the air, water, or ground; and details provisions for compliance with Federal, State, and local laws and regulations for storage and handling of these materials. In accordance with EM 385-1-1, a copy of the Material Safety Data Sheets (MSDS) and the maximum quantity of each hazardous material to be on site at any given time shall be included in the contaminant prevention plan. As new hazardous materials are brought on site or removed from the site, the plan shall be updated.
- o. A waste water management plan that identifies the methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines. If a settling/retention pond is required, the plan shall include the design of the pond including drawings, removal plan, and testing requirements for possible pollutants. If land application will be the method of disposal for the wastewater, the plan shall include a sketch showing the location for land application along with a description of the pretreatment methods to be implemented. If surface discharge will be the method of disposal, a copy of the permit and associated documents shall be included as an attachment prior to discharging the wastewater. If disposal is to a sanitary sewer, the plan shall include documentation that the Waste Water Treatment Plant Operator has approved the flow rate, volume, and type of discharge. Disposal to the sanitary sewer shall be

1st BRIGADE BARRACKS FORT DRUM, NEW YORK

coordinated with Fort Drum Environmental Branch 48 hours prior to discharge. Fort Drum Environmental will obtain approval from the local waste treatment plant.

- p. A historical, archaeological, cultural resources, biological resources and wetlands plan that defines procedures for identifying and protecting historical, archaeological, cultural resources, biological resources and wetlands known to be on the project site: and/or identifies procedures to be followed if historical archaeological, cultural resources, biological resources and wetlands not previously known to be onsite or in the area are discovered during construction. The plan shall include methods to assure the protection of known or discovered resources and shall identify lines of communication between Contractor personnel and the Contracting Officer.
- q. A pesticide treatment plan shall be included and updated, as information becomes available. The plan shall include: sequence of treatment, dates, times, locations, pesticide trade name, EPA registration numbers, authorized uses, chemical composition, formulation, original and applied concentration, application rates of active ingredient (i.e. pounds of active ingredient applied), equipment used for application and calibration of equipment. The Contractor is responsible for Federal, State, Regional and Local pest management record keeping and reporting requirements as well as any additional Installation Project Office specific requirements. The Contractor shall follow AR 200-5 Pest Management, Chapter 2, Section III "Pest Management Records and Reports" for data required to be reported to the Installation.

1.7.3 Appendix

Copies of all environmental permits, permit application packages, approvals to construct, notifications, certifications, reports, and termination documents shall be attached, as an appendix, to the Environmental Protection Plan.

1.8 PROTECTION FEATURES

Prior to start of any onsite construction activities, the Contractor and the Contracting Officer shall make a joint condition survey. Immediately following the survey, the Contractor shall prepare a brief report including a plan describing the features requiring protection under the provisions of the Contract Clauses, which are not specifically identified on the drawings as environmental features requiring protection along with the condition of trees, shrubs and grassed areas immediately adjacent to the site of work and adjacent to the Contractor's assigned storage area and access route(s), as applicable. This survey report shall be signed by both the Contractor and the Contracting Officer upon mutual agreement as to its accuracy and completeness. The Contractor shall protect those environmental features included in the survey report and any indicated on the drawings, regardless of interference which their preservation may cause to the Contractor's work under the contract.

1.9 SPECIAL ENVIRONMENTAL REQUIREMENTS

The Contractor shall comply with the special environmental requirements listed here and included at the end of this section.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

1.10 ENVIRONMENTAL ASSESSMENT OF CONTRACT DEVIATIONS

Any deviations, requested by the Contractor, from the drawings, plans and specifications which may have an environmental impact will be subject to approval by the Contracting Officer and may require an extended review, processing, and approval time. The Contracting Officer reserves the right to disapprove alternate methods, even if they are more cost effective, if the Contracting Officer determines that the proposed alternate method will have an adverse environmental impact.

1.11 NOTIFICATION

The Contracting Officer will notify the Contractor in writing of any observed noncompliance with Federal, State or local environmental laws or regulations, permits, and other elements of the Contractor's Environmental Protection plan. The Contractor shall, after receipt of such notice, inform the Contracting Officer of the proposed corrective action and take such action when approved by the Contracting Officer. The Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions shall be granted or equitable adjustments allowed to the Contractor for any such suspensions. This is in addition to any other actions the Contracting Officer may take under the contract, or in accordance with the Federal Acquisition Regulation or Federal Law.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 ENVIRONMENTAL PERMITS AND COMMITMENTS

This paragraph supplements the Contractor's responsibility under the Section 00700 Contract Clauses "PERMITS AND RESPONSIBILITIES". The Contractor shall comply with the terms and conditions of this RFP.

The Contractor shall be responsible for contacting the appropriate regulatory authorities and preparing the permit applications for submission to the contracting officer to obtain and comply with all environmental permits and commitments required by Federal, State, Regional, and local environmental laws and regulations.

3.2 LAND RESOURCES

The Contractor shall confine all activities to areas defined by the drawings and specifications. Prior to the beginning of any construction, the Contractor shall identify any land resources to be preserved within the work area. Except in areas indicated on the drawings or specified to be cleared, the Contractor shall not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and land forms without approval. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. The Contractor shall provide effective protection for land and vegetation resources at all times as defined in the following subparagraphs. Stone, soil, or other materials displaced into uncleared areas shall be removed by the Contractor.

1st BRIGADE BARRACKS FORT DRUM, NEW YORK

3.2.1 Work Area Limits

Prior to commencing construction activities, the Contractor shall mark the areas that need not be disturbed under this contract. Isolated areas within the general work area which are not to be disturbed shall be marked or fenced. Monuments and markers shall be protected before construction operations commence. Where construction operations are to be conducted during darkness, any markers shall be visible in the dark. The Contractor's personnel shall be knowledgeable of the purpose for marking and/or protecting particular objects.

3.2.2 Landscape

Trees, shrubs, vines, grasses, land forms and other landscape features indicated and defined on the drawings to be preserved shall be clearly identified by marking, fencing, or wrapping with boards, or any other approved techniques. The Contractor shall restore landscape features damaged or destroyed during construction operations outside the limits of the approved work area.

3.2.3 Erosion and Sediment Controls

The Contractor shall be responsible for providing erosion and sediment control measures in accordance with Federal, State, and local laws and regulations. The erosion and sediment controls selected and maintained by the Contractor shall be such that water quality standards are not violated as a result of the Contractor's construction activities. The area of bare soil exposed at any one time by construction operations should be kept to a minimum. The Contractor shall construct or install temporary and permanent erosion and sediment control best management practices (BMPs) as specified in Section 01356 STORM WATER POLLUTION PREVENTION MEASURES. BMPs may include, but not be limited to, vegetation cover, stream bank stabilization, slope stabilization, silt fences, construction of terraces, interceptor channels, sediment traps, inlet and outfall protection, diversion channels, and sedimentation basins. The Contractor's best management practices shall also be in accordance with the State Pollutant Discharge Elimination System (SPDES) Storm Water Pollution Prevention Plan (SWPPP), which shall be reviewed at the Fort Drum Environmental Office. Any temporary measures shall be removed after the area has been stabilized.

3.2.4 Contractor Facilities and Work Areas

The Contractor's field offices, staging areas, stockpile storage, and temporary buildings shall be placed in areas designated on the drawings or as directed by the Contracting Officer. Temporary movement or relocation of Contractor facilities shall be made only when approved. Erosion and sediment controls shall be provided for on-site stockpile storage, borrow areas and spoil areas to prevent sediment from entering nearby waters. Temporary excavation and embankments for plant and/or work areas shall be controlled to protect adjacent areas.

3.3 WATER RESOURCES

The Contractor shall monitor construction activities to prevent pollution of surface and ground waters. Toxic or hazardous chemicals shall not be applied to soil or vegetation unless otherwise indicated. All water areas affected by construction activities shall be monitored by the Contractor. For construction activities immediately adjacent to impaired surface waters, the Contractor shall be capable of quantifying sediment or pollutant loading to that surface water when required by State or Federally issued Clean Water Act permits.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

3.3.1 Dewatering Operations

Construction operations for dewatering shall be controlled at all times to maintain compliance with existing State water quality standards and designated uses of the surface water body. The Contractor shall comply with the State of New York water quality standards and anti-degradation provisions and the Clean Water Act Section 404, Nation Wide Permit.

3.3.2 Wetlands

The Contractor shall not enter, disturb, destroy, or allow discharge of contaminants into any wetlands.

3.4 AIR RESOURCES

Equipment operation, activities, or processes performed by the Contractor shall be in accordance with all Federal and State air emission and performance laws and standards.

3.4.1 Particulates

Dust particles; aerosols and gaseous by-products from construction activities; and processing and preparation of materials, such as from asphaltic batch plants; shall be controlled at all times, including weekends, holidays and hours when work is not in progress. The Contractor shall maintain excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and other work areas within or outside the project boundaries free from particulates which would cause the Federal, State, and local air pollution standards to be exceeded or which would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp at all times. The Contractor must have sufficient, competent equipment available to accomplish these tasks. Particulate control shall be performed as the work proceeds and whenever a particulate nuisance or hazard occurs. The Contractor shall comply with all State and local visibility regulations. Permits shall be required for any industrial operation (Batch Plant and Rock Crushing).

3.4.2 Odors

Odors from construction activities shall be controlled at all times. The odors shall not cause a health hazard and shall be in compliance with State regulations and/or local ordinances.

3.4.3 Sound Intrusions

The Contractor shall keep construction activities under surveillance and control to minimize environment damage by noise. The Contractor shall comply with the provisions of the State of New York rules.

3.4.4 Burning

Burning shall be prohibited on the Government premises.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

3.5 CHEMICAL MATERIALS MANAGEMENT AND WASTE DISPOSAL

Disposal of wastes shall be as directed below, unless otherwise specified in other sections and/or shown on the drawings.

3.5.1 Solid Wastes

All solid wastes generated in conjunction with this project (including all C&D debris) shall be tracked and recorded by weight. Total weights for solid waste disposal shall be forwarded to the PW-Environmental Division, ATTN. Mark W Clarke, at the end of each fiscal quarter or upon project completion, whichever occurs first.

Work sites shall be policed daily to ensure C&D debris and litter are properly contained. Dumpsters and roll-offs shall be covered at the end of each workday to prevent blow-away litter and debris. Solid wastes (excluding clearing debris) shall be placed in containers that are emptied on a regular schedule. Handling, storage, and disposal shall be conducted to prevent contamination. Segregation measures shall be employed so that no hazardous or toxic waste will become co-mingled with solid waste. The Contractor shall transport solid waste off Government property and dispose of it in compliance with Federal, State, and local requirements for solid waste disposal. A Subtitle D RCRA permitted landfill shall be the minimum acceptable off-site solid waste disposal option. The Contractor shall verify that the selected transporters and disposal facilities have the necessary permits and licenses to operate.

3.5.2 Chemicals and Chemical Wastes

Chemicals shall be dispensed ensuring no spillage to the ground or water. Periodic inspections of dispensing areas to identify leakage and initiate corrective action shall be performed and documented. This documentation will be periodically reviewed by the Government. Chemical waste shall be collected in corrosion resistant, compatible containers. Collection drums shall be monitored and removed to a staging or storage area when contents are within 150 mm of the top. Wastes shall be classified, managed, stored, and disposed of in accordance with Federal, State, and local laws and regulations.

3.6.3 Contractor Generated Hazardous Wastes/Excess Hazardous Materials

Hazardous wastes are defined in 40 CFR 261, or are as defined by applicable State and local regulations. Hazardous materials are defined in 49 CFR 171 - 178. The Contractor shall, at a minimum, manage and store hazardous waste in compliance with 40 CFR 262 and shall manage and store hazardous waste in accordance with the Installation hazardous waste management plan. The Contractor shall take sufficient measures to prevent spillage of hazardous and toxic materials during dispensing. The Contractor shall segregate hazardous waste from other materials and wastes, shall protect it from the weather by placing it in a safe covered location, and shall take precautionary measures such as berming or other appropriate measures against accidental spillage. The Contractor shall be responsible for storage, describing, packaging, labeling, marking, and placarding of hazardous waste and hazardous material in accordance with 49 CFR 171 - 178, State, and local laws and regulations. The Contractor shall transport Contractor generated hazardous waste off Government property within 60 calendar days in accordance with the Environmental Protection Agency and the Department of Transportation laws and regulations. The Contractor shall dispose of hazardous waste in compliance with Federal, State and local laws and regulations. Spills of

1st BRIGADE BARRACKS FORT DRUM, NEW YORK

hazardous or toxic materials shall be immediately reported to the Contracting Officer and the Fort Drum Environmental Office. Cleanup and cleanup costs due to spills shall be the Contractor's responsibility. The disposition of Contractor generated hazardous waste and excess hazardous materials are the Contractor's responsibility. The contractor shall be responsible to prepare the Waste Profiles and Land Fill Disposal Restriction Forms and also sign them. Also, in accordance with the Waste Profiles the Contractor shall prepare the Manifests for shipment of the Hazardous Wastes/Excess Hazardous Materials and the authorized Government Representative shall sign the Manifests having as authorization letter from the Using Agency and the CENAN District Engineer and shall be certified by being trained in the USEPA (RCRA) and USDOT regulations for signing Manifests of Hazardous Wastes/Excess Materials. In case the Using Agency requires the Using Agency's Officer to sign the Manifests he/she must also satisfy the above noted training requirements. The contractor shall provide the E.R phone number manned 24-hours.

The Contractor shall be responsible to prepare the waste profiles/waste analysis and land fill disposal restrictions forms and also sign them.

In accordance with the waste profiles/waste analysis and landfill disposal restrictions forms the contractor shall prepare the Manifests for the shipments of hazardous wastes/excess hazardous materials. The EN Project Manager shall discuss with the Using Agency if they have on board a properly trained and authorized person to sign the Manifests as the Generator. If not, the Construction Field Engineer or other CENAN person shall be required to sign the Manifests and he will be required to have the proper training in EPA/RCRA and DOT regulations and the required letter from the CENAN NY District Engineer authorizing to sign the Manifests. Closing, the Contractor shall provide the 24 Hours 7 Days a week Emergency Response Telephone Number manned day and night and at all times during the shipment.

3.6.4 Fuel and Lubricants

Storage, fueling and lubrication of equipment and motor vehicles shall be conducted in a manner that affords the maximum protection against spill and evaporation. Fuel, lubricants and oil shall be managed and stored in accordance with all Federal, State, Regional, and local laws and regulations. Used lubricants and used oil to be discarded shall be stored in marked corrosion-resistant containers and recycled or disposed in accordance with 40 CFR 279, State, and local laws and regulations. There shall be no storage of fuel on the project site. Fuel must be brought to the project site each day that work is performed.

3.6.5 Waste Water

Disposal of waste water shall be as specified below.

- a. Waste water from construction activities, such as onsite material processing, concrete curing, foundation and concrete clean-up, water used in concrete trucks, forms, etc. shall not be allowed to enter water ways or to be discharged prior to being treated to remove pollutants. The Contractor shall dispose of the construction related waste water off-Government property in accordance with all Federal, State, Regional and Local laws and regulations.
- b. For discharge of ground water, the Contractor shall surface discharge in accordance with the requirements of the NPDES or State STORM WATER DISCHARGES FROM CONSTRUCTION SITES permit.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- c. Water generated from the flushing of lines after disinfection or disinfection in conjunction with hydrostatic testing shall be discharged into the sanitary sewer with prior approval and/or notification through the Fort Drum Environmental Office to the Waste Water Treatment Plant's Operator.

3.7 RECYCLING AND WASTE MINIMIZATION

All Federal, State and Local recycling rules and initiatives will be strictly observed. The Contractor shall participate in State and local government sponsored recycling programs. The Contractor is further encouraged to minimize solid waste generation throughout the duration of the project.

3.8 NON-HAZARDOUS SOLID WASTE DIVERSION REPORT

The Contractor shall maintain an inventory of non-hazardous solid waste diversion and disposal of construction and demolition debris. The Contractor shall submit a report through the Contracting Officer on the first working day after each fiscal year quarter, starting the first quarter that non-hazardous solid waste has been generated. The following shall be included in the report:

- a. Construction and Demolition (C&D) Debris Disposed = _____ in cubic meters, as appropriate.
- b. Construction and Demolition (C&D) Debris Recycled = _____ in cubic meters, as appropriate.
- c. Total C&D Debris Generated = _____ in cubic meters, as appropriate.
- d. Waste Sent to Waste-To-Energy Incineration Plant (This amount should not be included in the recycled amount) = _____ in cubic meters, as appropriate.

3.9 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

If during excavation or other construction activities any previously unidentified or unanticipated historical, archaeological, and cultural resources are discovered or found, all activities that may damage or alter such resources shall be temporarily suspended. Resources covered by this paragraph include but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone, charcoal, or other deposits; rock or coral alignments, pavings, wall, or other constructed features; and any indication of agricultural or other human activities. Upon such discovery or find, the Contractor shall immediately notify the Contracting Officer so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. The Contractor shall cease all activities that may result in impact to or the destruction of these resources. The Contractor shall secure the area and prevent employees or other persons from trespassing on, removing, or otherwise disturbing such resources.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

3.10 BIOLOGICAL RESOURCES

The Contractor shall minimize interference with, disturbance to, and damage to fish, wildlife, and plants including their habitat. The Contractor shall be responsible for the protection of threatened and endangered animal and plant species including their habitat in accordance with Federal, State, Regional, and local laws and regulations.

3.11 INTEGRATED PEST MANAGEMENT

In order to minimize impacts to existing fauna and flora, the Contractor, through the Contracting Officer, shall coordinate with the Installation Pest Management Coordinator (IPMC) at the earliest possible time prior to pesticide application. The Contractor shall discuss integrated pest management strategies with the IPMC and receive concurrence from the IPMC through the COR prior to the application of any pesticide associated with these specifications. Installation Project Office Pest Management personnel shall be given the opportunity to be present at all meetings concerning treatment measures for pest or disease control and during application of the pesticide. The use and management of pesticides are regulated under 40 CFR 152 - 186.

3.11.1 Pesticide Delivery and Storage

Pesticides shall be delivered to the site in the original, unopened containers bearing legible labels indicating the EPA registration number and the manufacturer's registered uses. Pesticides shall be stored according to manufacturer's instructions and under lock and key when unattended.

3.11.2 Qualifications

For the application of pesticides, the Contractor shall use the services of a subcontractor whose principal business is pest control. The subcontractor shall be licensed and certified in the state where the work is to be performed.

3.11.3 Pesticide Handling Requirements

The Contractor shall formulate, treat with, and dispose of pesticides and associated containers in accordance with label directions and shall use the clothing and personal protective equipment specified on the labeling for use during all phases of the application. Material Safety Data Sheets (MSDS) shall be available for all pesticide products.

3.11.4 Application

Pesticides shall be applied by a State Certified Pesticide Applicator in accordance with EPA label restrictions and recommendation. The Certified Applicator shall wear clothing and personal protective equipment as specified on the pesticide label. Water used for formulating shall only come from locations designated by the Contracting Officer. The Contractor shall not allow the equipment to overflow. Prior to application of pesticide, all equipment shall be inspected for leaks, clogging, wear, or damage and shall be repaired prior to being used.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

3.12 PREVIOUSLY USED EQUIPMENT

The Contractor shall clean all previously used construction equipment prior to bringing it onto the project site. The Contractor shall ensure that the equipment is free from soil residuals, egg deposits from plant pests, noxious weeds, and plant seeds. The Contractor shall consult with the USDA jurisdictional office for additional cleaning requirements.

3.13 MAINTENANCE OF POLLUTION FACILITIES

The Contractor shall maintain permanent and temporary pollution control facilities and devices for the duration of the contract or for that length of time construction activities create the particular pollutant.

3.14 MILITARY MUNITIONS

In the event the Contractor discovers or uncovers military munitions as defined in 40 CFR 260, the Contractor shall immediately stop work in that area and immediately inform the Contracting Officer.

3.15 TRAINING OF CONTRACTOR PERSONNEL

The Contractor's personnel shall be trained in all phases of environmental protection and pollution control. The Contractor shall conduct environmental protection/pollution control meetings for all Contractor personnel prior to commencing construction activities. Additional meetings shall be conducted for new personnel and when site conditions change. The training and meeting agenda shall include: methods of detecting and avoiding pollution; familiarization with statutory and contractual pollution standards; installation and care of devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental protection/pollution control; anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants; recognition and protection of archaeological sites, artifacts, wetlands, and endangered species and their habitat that are known to be in the area.

3.16 POST CONSTRUCTION CLEANUP

The Contractor shall clean up all areas used for construction in accordance with Section 00800 Special Contract Requirements paragraph "Cleaning Up". The Contractor shall, unless otherwise instructed in writing by the Contracting Officer, obliterate all signs of temporary construction facilities such as haul roads, work area, structures, foundations of temporary structures, stockpiles of excess or waste materials, and other vestiges of construction prior to final acceptance of the work. The disturbed area shall be graded, filled and the entire area seeded unless otherwise indicated.

-- End Of Section --

SECTION 01356

STORM WATER POLLUTION PREVENTION MEASURES

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 4439	(1997) Standard Terminology for Geosynthetics
ASTM D 4491	(1996) Water Permeability of Geotextiles by Permittivity
ASTM D 4533	(1991; R 1996) Trapezoid Tearing Strength of Geotextiles
ASTM D 4632	(1991; R 1996) Grab Breaking Load and Elongation of Geotextiles
ASTM D 4751	(1995) Determining Apparent Opening Size of a Geotextile
ASTM D 4873	(1995) Identification, Storage, and Handling of Geosynthetic Rolls

1.2 GENERAL

The Contractor shall implement the storm water pollution prevention measures specified in this section in a manner which will meet the requirements of Section 01355 ENVIRONMENTAL PROTECTION, and the requirements of the National Pollution Discharge Elimination System (NPDES). In New York, which is a NPDES-delegated state, this is accomplished through the administration of the State Pollutant Discharge Elimination System (SPDES) program.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-07 Certificates

Mill Certificate or Affidavit; G

Certificate attesting that the Contractor has met all specified requirements.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

1.4 EROSION AND SEDIMENT CONTROLS

The controls and measures required by the Contractor are described below.

1.4.1 Stabilization Practices

The stabilization practices to be implemented shall include temporary seeding, erosion control matts, protection of trees, preservation of mature vegetation, etc. On his daily CQC Report, the Contractor shall record the dates when the major grading activities occur, (e.g., clearing and grubbing, excavation, embankment, and grading); when construction activities temporarily or permanently cease on a portion of the site; and when stabilization practices are initiated. Except as provided in paragraphs UNSUITABLE CONDITIONS and NO ACTIVITY FOR LESS THAN 21 CALENDAR DAYS, stabilization practices shall be initiated as soon as practicable, but no more than 14 calendar days, in any portion of the site where construction activities have temporarily or permanently ceased.

1.4.1.1 Unsuitable Conditions

Where the initiation of stabilization measures by the fourteenth day after construction activity temporarily or permanently ceases is precluded by unsuitable conditions caused by the weather, stabilization practices shall be initiated as soon as practicable after conditions become suitable.

1.4.1.2 No Activity for Less Than 21 Days

Where construction activity will resume on a portion of the site within 21 calendar days from when activities ceased (e.g., the total time period that construction activity is temporarily ceased is less than 21 calendar days), then stabilization practices do not have to be initiated on that portion of the site by the fourteenth day after construction activity temporarily ceased.

1.4.2 Structural Practices

Structural practices shall be implemented to divert flows from exposed soils, temporarily store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Structural practices shall be implemented in a timely manner during the construction process to minimize erosion and sediment runoff. Location and details of installation and construction are shown on the drawings.

1.4.2.1 Silt Fences

The Contractor shall provide silt fences as a temporary structural practice to minimize erosion and sediment runoff. Silt fences shall be properly installed to effectively retain sediment immediately after completing each phase of work where erosion would occur in the form of sheet and rill erosion (e.g. clearing and grubbing, excavation, embankment, and grading). Silt fences shall be installed in the locations indicated on the contract drawings. Final removal of silt fence barriers shall be upon approval by the Contracting Officer.

1.4.2.2 Straw Bales

The Contractor shall provide bales of straw as a temporary structural practice to minimize erosion and sediment runoff. Bales shall be properly placed to effectively retain sediment

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

immediately after completing each phase of work (e.g., clearing and grubbing, excavation, embankment, and grading) in each independent runoff area (e.g., after clearing and grubbing in a area between a ridge and drain, bales shall be placed as work progresses, bales shall be removed/replaced/relocated as needed for work to progress in the drainage area). Areas where straw bales are to be used are shown on the contract drawings. Final removal of straw bale barriers shall be upon approval by the Contracting Officer. Rows of bales of straw shall be provided as follows:

- a. Along the downhill perimeter edge of all areas disturbed.
- b. Along the top of the slope or top bank of drainage ditches, channels, swales, etc. that traverse disturbed areas.
- c. Along the toe of all cut slopes and fill slopes of the construction areas.
- d. Perpendicular to the flow in the bottom of existing drainage ditches, channels, swales, etc. that traverse disturbed areas or carry runoff from disturbed areas. Rows shall be spaced as shown on the drawings.
- e. Perpendicular to the flow in the bottom of new drainage ditches, channels, and swales. Rows shall be spaced as shown on the contract drawings.
- f. At the entrance to culverts that receive runoff from disturbed areas.

PART 2 PRODUCTS

2.1 COMPONENTS FOR SILT FENCES

2.1.1 Filter Fabric

The geotextile shall comply with the requirements of ASTM D 4439, and shall consist of polymeric filaments which are formed into a stable network such that filaments retain their relative positions. The filament shall consist of a long-chain synthetic polymer composed of at least 85 percent by weight of ester, propylene, or amide, and shall contain stabilizers and/or inhibitors added to the base plastic to make the filaments resistance to deterioration due to ultraviolet and heat exposure. Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life at a temperature range of -18 to 49 degrees C. The filter fabric shall meet the following requirements:

FILTER FABRIC FOR SILT SCREEN FENCE

PHYSICAL PROPERTY	TEST PROCEDURE	STRENGTH REQUIREMENT
Grab Tensile	ASTM D 4632	445 N min.
Elongation (%)		30 % max.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

Trapezoid Tear	ASTM D 4533	245 N min.
Permittivity	ASTM D 4491	0.2 sec-1
AOS (U.S. Std Sieve)	ASTM D 4751	20-100

2.1.2 Silt Fence Stakes and Posts

The Contractor may use either wooden stakes or steel posts for fence construction. Wooden stakes utilized for silt fence construction, shall have a minimum cross section of 50 mm by 50 mm when oak is used and 100 mm by 100 mm when pine is used, and shall have a minimum length of 1.5 m. Steel posts (standard "U" or "T" section) utilized for silt fence construction, shall have a minimum mass of 1.98 kg per linear meter and a minimum length of 1.5 m.

2.1.3 Mill Certificate or Affidavit

A mill certificate or affidavit shall be provided attesting that the fabric and factory seams meet chemical, physical, and manufacturing requirements specified above. The mill certificate or affidavit shall specify the actual Minimum Average Roll Values and shall identify the fabric supplied by roll identification numbers. The Contractor shall submit a mill certificate or affidavit signed by a legally authorized official from the company manufacturing the filter fabric.

2.1.4 Identification Storage and Handling

Filter fabric shall be identified, stored and handled in accordance with ASTM D 4873.

2.2 COMPONENTS FOR STRAW BALES

The straw in the bales shall be stalks from oats, wheat, rye, barley, rice, or from grasses such as byhalia, bermuda, etc., furnished in air dry condition. The bales shall have a standard cross section of 350 mm by 450 mm. All bales shall be either wire-bound or string-tied. The Contractor may use either wooden stakes or steel posts to secure the straw bales to the ground. Wooden stakes utilized for this purpose, shall have a minimum dimensions of 50 mm by 50 mm in cross section and shall have a minimum length of 1 m. Steel posts (standard "U" or "T" section) utilized for securing straw bales, shall have a minimum mass of 1.98 kg per linear meter and a minimum length of 1m.

PART 3 EXECUTION

3.1 INSTALLATION OF SILT FENCES

Silt fences shall extend a minimum of 400 mm above the ground surface and shall not exceed 860 mm above the ground surface. Filter fabric shall be from a continuous roll cut to the length of the barrier to avoid the use of joints. When joints are unavoidable, filter fabric shall

1st BRIGADE BARRACKS FORT DRUM, NEW YORK

be spliced together at a support post, with a minimum 150 mm overlap, and securely sealed. A trench shall be excavated approximately 100 mm wide and 100 mm deep on the upslope side of the location of the silt fence. The 100 mm by 100 mm trench shall be backfilled and the soil compacted over the filter fabric. Silt fences shall be removed upon approval by the Contracting Officer.

3.2 INSTALLATION OF STRAW BALES

Straw bales shall be placed in a single row, lengthwise on the contour, with ends of adjacent bales tightly abutting one another. Straw bales shall be installed so that bindings are oriented around the sides rather than along the tops and bottoms of the bales in order to prevent deterioration of the bindings. The barrier shall be entrenched and backfilled. A trench shall be excavated the width of a bale and the length of the proposed barrier to a minimum depth of 100 mm. After the bales are staked and chinked (gaps filled by wedging with straw), the excavated soil shall be backfilled against the barrier. Backfill soil shall conform to the ground level on the downhill side and shall be built up to 100 mm against the uphill side of the barrier. Loose straw shall be scattered over the area immediately uphill from a straw bale barrier to increase barrier efficiency. Each bale shall be securely anchored by at least two stakes driven through the bale. The first stake or steel post in each bale shall be driven toward the previously laid bale to force the bales together. Stakes or steel pickets shall be driven a minimum 450 mm deep into the ground to securely anchor the bales.

3.3 MAINTENANCE

The Contractor shall maintain the temporary and permanent vegetation, erosion and sediment control measures, and other protective measures in good and effective operating condition by performing routine inspections to determine condition and effectiveness, by restoration of destroyed vegetative cover, and by repair of erosion and sediment control measures and other protective measures. The following procedures shall be followed to maintain the protective measures.

3.3.1 Silt Fence Maintenance

Silt fences shall be inspected in accordance with paragraph INSPECTIONS. Any required repairs shall be made promptly. Close attention shall be paid to the repair of damaged silt fence resulting from end runs and undercutting. Should the fabric on a silt fence decompose or become ineffective, and the barrier is still necessary, the fabric shall be replaced promptly. Sediment deposits shall be removed when deposits reach one-third of the height of the barrier. When a silt fence is no longer required, it shall be removed. The immediate area occupied by the fence and any sediment deposits shall be shaped to an acceptable grade. The areas disturbed by this shaping shall be seeded.

3.3.2 Straw Bale Maintenance

Straw bale barriers shall be inspected in accordance with paragraph INSPECTIONS. Close attention shall be paid to the repair of damaged bales, end runs and undercutting beneath bales. Necessary repairs to barriers or replacement of bales shall be accomplished promptly. Sediment deposits shall be removed when deposits reach one-half of the height of the barrier. Bale rows used to retain sediment shall be turned uphill at each end of each row. When a straw bale barrier is no longer required, it shall be removed. The immediate area occupied by

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

the bales and any sediment deposits shall be shaped to an acceptable grade. The areas disturbed by this shaping shall be seeded.

3.4 INSPECTIONS

3.4.1 General

The Contractor shall inspect disturbed areas of the construction site, areas used for storage of materials that are exposed to precipitation that have not been finally stabilized, stabilization practices, structural practices, other controls, and area where vehicles exit the site at least once every seven (7) calendar days and within 24 hours of the end of any storm that produces 13 mm or more rainfall at the site. Where sites have been finally stabilized, such inspections shall be conducted at least once every month.

3.4.2 Inspections Details

Disturbed areas and areas used for material storage that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the Storm Water Pollution Prevention Plan shall be observed to ensure that they are operating correctly. Discharge locations or points shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles exit the site shall be inspected for evidence of offsite sediment tracking.

3.4.3 Inspection Reports

For each inspection conducted, the Contractor shall prepare a report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the Storm Water Pollution Prevention Plan, maintenance performed, and actions taken. The report shall be furnished to the Contracting Officer within 24 hours of the inspection as a part of the Contractor's daily CQC REPORT. A copy of the inspection report shall be maintained on the job site.

-- End Of Section --

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

SECTION 01415

METRIC MEASUREMENTS
05/2002

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM E 380 (1993) Practice for use of the International System of Units (SI)

ASTM E 621 (1994; R 1999e1) Practice for Use of Metric (SI) Units in Building Design and Construction

1.2 GENERAL

This project includes metric units of measurements. The metric units used are the International System of Units (SI) developed and maintained by the General Conference on Weights and Measures (CGPM); the name International System of Units and the international abbreviation SI were adopted by the 11th CGPM in 1960. A number of circumstances require that both metric SI units and English inch-pound (I-P) units be included in a section of the specifications. When both metric and I-P measurements are included, the section may contain measurements for products that are manufactured to I-P dimensions and then expressed in mathematically converted metric value (soft metric) or, it may contain measurements for products that are manufactured to an industry recognized rounded metric (hard metric) dimensions but are allowed to be substituted by I-P products to comply with the law. Dual measurements are also included to indicate industry and/or Government standards, test values or other controlling factors, such as the code requirements where I-P values are needed for clarity or to trace back to the referenced standards, test values or codes.

1.3 USE OF MEASUREMENTS

Measurements shall be either in SI or I-P units as indicated, except for soft metric measurements or as otherwise authorized. When only SI or I-P measurements are specified for a product, the product shall be procured in the specified units (SI or I-P) unless otherwise authorized by the Contracting Officer. The Contractor shall be responsible for all associated labor and materials when authorized to substitute one system of units for another and for the final assembly and performance of the specified work and/or products.

1.3.1 Hard Metric

A hard metric measurement is indicated by an SI value with no expressed correlation to an I-P value. Hard metric measurements are often used for field data such as distance from one point

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

to another or distance above the floor. Products are considered to be hard metric when they are manufactured to metric dimensions or have an industry recognized metric designation.

1.3.2 Soft Metric

- a. A soft metric measurement is indicated by an SI value which is a mathematical conversion of the I-P value shown in parentheses (e.g. 38.1 mm (1-1/2 inches)). Soft metric measurements are used for measurements pertaining to products, test values, and other situations where the I-P units are the standard for manufacture, verification, or other controlling factor. The I-P value shall govern while the metric measurement is provided for information.
- b. A soft metric measurement is also indicated for products that are manufactured in industry designated metric dimensions but are required by law to allow substitute I-P products. These measurements are indicated by a manufacturing hard metric product dimension followed by the substitute I-P equivalent value in parenthesis (e.g., 190 x 190 x 390 mm (7-5/8 x 7-5/8 x 15-5/8 inches)).

1.3.3 Neutral

A neutral measurement is indicated by an identifier which has no expressed relation to either an SI or an I-P value (e.g., American Wire Gage (AWG) which indicates thickness but in itself is neither SI or I-P).

1.4 COORDINATION

Discrepancies, such as mismatches or product unavailability, arising from use of both metric and non-metric measurements and discrepancies between the measurements in the specifications and the measurements in the drawings shall be brought to the attention of the Contracting Officer for resolution.

1.5 RELATIONSHIP TO SUBMITTALS

Submittals for Government approval or for information only shall cover the SI or I-P products actually being furnished for the project. The Contractor shall submit the required drawings and calculations in the same units used in the contract documents describing the product or requirement unless otherwise instructed or approved. The Contractor shall use ASTM E 380 and ASTM E 621 as the basis for establishing metric measurements required to be used in submittals.

--End of Section--

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

SECTION 01420

SAFETY

1.0 SAFETY: The contractor shall comply with all applicable Federal, State, and local safety and occupational health laws and regulations. Applicable provisions of the Corps of Engineers manual entitled Safety and Health Requirements Manual EM 385-1-1, dated 3 September 1996 will be applied to all work under this contract. The referenced manual may be purchased from the Contracting Officer's Representative (COR) at the job site, from the U.S. Government Printing Office, Superintendent of Documents, Mail Stop: SSOP, Washington, DC 20402-9328, or via the internet at www.USACE.army.mil.

1.1 U.S. ARMY CORPS OF ENGINEERS SAFETY AND HEALTH REQUIREMENTS MANUAL, EM 385—1-1: This paragraph applies to contracts and purchase orders that require the Contractor to comply with EM 385-1-1 (e.g. contracts that include the Accident Prevention Clause at FAR 52.236-13 and/or safety provisions). EM 385-1-1 and its changes are available at <http://www.hq.usace.army.mil> (at the HQ homepage, select Safety and Occupational Health and then select Changes to EM). The Contractor shall be responsible for complying with the current edition and all changes posted on the web as set in this solicitation.

2.0 ACCIDENT PREVENTION PROGRAM: Within fifteen (15) calendar days after receipt of Notice to Proceed, and at least ten (10) calendar days prior to the Pre-construction Safety Conference, four (4) copies of the Accident Prevention Plan shall be submitted for review and acceptance by the Contracting Officer or the Contracting Officers Representative (COR). The accident prevention program shall be prepared in the format outlined in Appendix A of EM 385-1-1, "Minimum Basic Requirements for Accident Prevention Plan".

3.0 HAZARD ANALYSIS: Submit one time with the Accident Prevention Program for each major phase of work, an Activity Hazard Analysis that shall be prepared by the Contractor performing that work, and submitted for review and acceptance. The format shall be in accordance with EM 385-1-1, figure 1-1. A major phase of work is defined as a operation involving a type of work presenting hazards not experienced in previous operations or where a new contractor or work crew is to perform. (See Contractor Quality Control specification for further guidance regarding coordination of "Activities" and "Principal Steps" indicated in the Activity Hazard Analysis with Contractor Quality Control activities). The analysis shall define the activities to be performed and identify the sequence of work, the specific hazards anticipated, and the control measures to be implemented to eliminate or reduce each hazard to an acceptable level. Work shall not proceed on that phase until the activity hazard analysis has been accepted and a preparatory meeting has been conducted by the Contractor to discuss its contents with everyone engaged in the activities, including the government on-site representative(s). The activity hazard analyses shall be continuously reviewed and when appropriate modified to address changing site conditions or operations, with the concurrence of the site safety representative, the site superintendent, and the Contracting Officer. Activity hazard analyses shall be attached to and become part of the accident prevention plan.

3.1 Hazard analysis shall be used to identify and evaluate all substances, agents, or environments that present hazards and recommend control measures. Engineering and administrative controls shall be used to control hazards; in cases where engineering or administrative controls are not feasible, personal protective equipment may be used.

1st BRIGADE BARRACKS FORT DRUM, NEW YORK

3.2 Information contained in MSDS (Material Safety Data Sheets) shall be incorporated in the hazard analysis for the activities in which hazardous or toxic materials will be used, or generated (e.g. fiberglass, crystalline silica, metal dust or fume, etc.).

4.0 **SITE SAFETY OFFICER:** The contractor shall identify an individual directly employed by the contractor as Site Safety Officer responsible to the Contractor to implement and continually enforce the Accident Prevention Plan. The site safety officer shall not be the same individual as the Quality Control System Manager if the CQC System Manager is required to have no duties other than Quality Control. The site safety officer shall have the authority to suspend operational activities if the health and safety of personnel are endangered, and to suspend an individual from operational activities for infractions of the Accident Prevention Plan.

4.1 Qualifications: The name, qualifications (training and experience) of the designated Site Safety Officer shall be included in the Accident Prevention Plan. The Site safety officer shall have the following qualifications:

- a. A minimum of 5 years construction experience with at least 2 years experience in implementing safety programs at construction work sites for projects of comparable scope and complexity.
- b. Documented experience in construction techniques and construction safety procedures.
- c. Working knowledge of Federal and state occupational health and safety regulations.
- d. Specific training in excavation safety, fall protection, and confined space.
- e. CPR/First Aid certification (current)
- f. Familiarity with and ability to use and implement the Corps of Engineers Safety Manual EM 385-1-1.

4.2 Other Requirements: Other sections of the contract documents may also require separate specially qualified individuals in such areas a chemical data acquisition, sampling and analysis, medical monitoring, industrial hygiene, quality control, etc.

5.0 **SITE INSPECTIONS:** The site safety officer shall perform daily inspections of the job sites and the work in progress to ensure compliance with EM 385-1-1 and to determine the effectiveness of the accident prevention plan. Daily inspection logs shall be used to document inspections noting safety and health deficiencies, deficiencies in the effectiveness of the accident prevention plan, and corrective actions including timetable and responsibilities. The daily inspection logs will be attached to and submitted with the Daily Quality Control Reports or may be incorporated in the daily CQC report. Each entry shall include date, work area checked, employees present in work area, protective equipment and work equipment in use, special safety and health issues and notes, and signature of the preparer.

6.0 **HIGHLIGHTED PROVISIONS:** In addition to those items contained in EM 385-1-1, Appendix A, include the following items in the accident prevention plan:

6.1 Hard Hat Area. A statement that the jobsite is classified a "hard hat" area from start to finish.

6.2 Sanitation and Medical Requirements. Estimate the greatest number of employees, supervisors, etc., to be working at peak construction period, including subcontractor personnel. Include sanitation requirements and medical facilities identified for the job site. If a medical facility or physician is not accessible within five minutes of an injury to a group of two or more employees for the treatment of injuries, identify at least two or more employees on each shift who are qualified to administer first aid and CPR.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

6.3 Equipment Inspection. The type of inspection program on cranes, trucks, and other types of construction equipment the Contractor plans to implement. Who will be responsible for the inspection and how the Contractor will control equipment of sub-contractors and equipment bought to the site by rental companies. Types of records to be kept.

6.3.1 Copies of records of all equipment inspections will be kept at the job site for review by the designated authority.

6.4 Crane & Derrick Operators: Written proof of qualification for all crane and derrick operators in accordance with EM 385-1-1, 16.C.04. Qualification shall be by written (or oral) examination and practical operating examination unless the operator is licensed by a state or city-licensing agency for the particular type of crane or derrick. Proof of qualification shall be provided by the qualifying source.

7.0 **ACCIDENT REPORTS**: The contractor shall immediately report all accidents by telephone to the COR.

7.1 The Contractor will provide an initial written report of the accident to the COR within 24 hours. The Contractor shall complete and submit ENG Form 3394 for all accidents involving lost work time, medical treatment, and/or property damage in excess of \$2000.00 within 48 hours of the accident. The report shall accurately represent the circumstances of the accident, cause of the accident, extent of medical treatment, extent of injuries and steps to prevent occurrence of similar accidents. The hazard analysis covering the work activity being undertaken during the accident shall be attached to the report.

7.2 Daily records of all first aid treatment not otherwise reportable shall be maintained at the job site and furnished to the designated authority upon request. Records shall also be maintained of all exposure and accident experience incidental to the work (OSHA Form 300 or equivalent as prescribed by 29 CFR 1904).

8.0 **MONTHLY EXPOSURE REPORTS**: The Contractor shall submit to the COR no later than the 1st day of each month, a compilation of manhours worked each month by the prime contractor and each subcontractor. In addition, the contractor shall report the number of accidents, severity, class of accidents, and lost time work days for each month.

9.0 **CLEAN-UP**: The Contractor's Accident Prevention Plan shall identify the individual's responsible for cleanup and shall establish a regular housekeeping procedure and schedule. If the COR determines that cleanup is not being performed satisfactorily, the Contractor shall establish a work crew to perform the continuous cleanup required by the contract clause titled: CLEANING UP: The number of individuals appointed to the cleanup work crew shall be increased as required in order to render adequate cleanup.

10.0 **FOCUS AREAS**: To supplement and emphasize the requirements of EM 385-1-1, the following is provided and shall be met as applicable.

10.1 Electrical Work: Electrical work shall not be performed on or near energized lines or equipment unless specified in the plans and specifications and approved by the COR. Plan and layout of proposed temporary power to the construction site shall be submitted and approved by the COR before work will be permitted.

10.1.1 Upon request by the Contractor, arrangements will be made for de-energizing lines and equipment so that work may be performed. All outages shall be requested through the COR a minimum of 14 days, unless otherwise specified, prior to the beginning of the specified outages. Dates and duration will be specified.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

10.2 If approved by the COR, the following work may be performed with the lines energized using certified hot line equipment on lines above 600 volts, when the following conditions have been met:

- a. Work below the conductors no closer than the clearance required in EM 385-1-1 from the energized conductors.
- b. Setting and connection of new pre-trimmed poles in energized lines which do not replace an existing pole.
- c. Setting and removing transformers or other equipment on poles.
- d. Installation or removal of hot line connectors, jumpers, dead-end insulators for temporary isolation, etc., which are accomplished with hot line equipment from an insulated bucket truck.

10.3 Energized Line Work Plan: The Contractor shall submit a plan, in writing, describing his/her method of operation and the equipment to be used on energized lines. Proper certification from an approved source of the safe condition of all tools and equipment will be provided with the plan. The work will be planned and scheduled so that proper supervision is maintained. Emergency procedures, including communication, for disconnecting power in the event of an accident will be outlined in the plan. The Contractor will review his/her plan with the COR prior to being granted permission to perform the work.

10.4. No work on lines greater than 600 volts will be performed from the pole or without the use of an insulated bucket truck.

10.5 No work will be done on overbuilt lines while underbuilt lines are energized, except for temporary isolation and switching.

10.6 Electrical Tools and Cords: Hand held electrical tools shall be used only on circuits protected by ground fault circuit interrupters for protection of personnel. All general use extension cords shall be hard usage or extra hard usage as specified in Table 11-1 of EM 385-1-1. Damaged or repaired cords shall not be permitted.

10.7 Temporary Power: Temporary electrical distribution systems and devices shall be checked and found acceptable for polarity, ground continuity, and ground resistance before initial use and after modification. GFI outlets shall be installed and tested with a GFI circuit tester (tripping device) prior to use. Portable and vehicle mounted generators shall be inspected for compliance with EM 385-1-1 and NFPA 70. All electrical equipment located outdoors or in wet locations shall be enclosed in weatherproof enclosures in accordance with EM 385-1-1. Records of all tests and inspections will be kept by the contractor and made available on site for review by the designated authority. Submit sketch of proposed temporary power for acceptance.

10.8 Rollover Protective Structures (ROPS): Seat belts and ROPS shall be installed on all construction equipment as required by paragraph 16.B.12 of EM 385-1-1. The operating authority will furnish proof from the manufacturer or licensed engineer that ROPS meets the applicable SAE standards cited in EM 385-1-1, pg. 257.

10.9 Radiation Permits or Authorizations: Contractors contemplating the use of a licensed or DOD regulated radiological device or radioactive material on a DOD installation will secure appropriate permit or authorization from the Department of Army or Department of the Air Force, as applicable. A 45-day lead-time should be programmed for obtaining the necessary authorization or permit. When requested, the COR will assist the Contractor in obtaining the required permit or authorization.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

10.9.1 The Contractor shall develop and implement a radiation safety program to comply with EM 385-1-1, Section 06.E. Provisions for leak tests, authorized personnel, transport certificates, etc. will be addressed in the radiation safety program.

10.10 Elevating Work Platforms: All elevating work platforms shall be designed, constructed, maintained, used, and operated in accordance with ANSI A92.3, ANSI A92.6, ANSI A92.5 and EM 385-1-1, Sections 22.J and 16.A.

10.10.1 Only personnel trained in the use of elevating work platforms shall be authorized to use them. A list of authorized users will be maintained by the contractor at the job site. The list will be updated to remain current and made available for review on site by the designated authority. Personnel safety belts must be worn.

10.11 Fall Protection: Fall protection in the form of standard guardrails, nets, or personal fall arrest systems will be provided for all work conducted over 1.8 meters (6 feet) in height. The contractor will submit his/her proposed method of fall protection to the COR as part of the Job Hazard Analysis for acceptance. If the contractor deems that conventional fall protection as described above is not feasible, or creates a greater hazard, the Contractor will prepare a written fall protection plan in accordance with OSHA 29 CFR 1926.502(k). The plan will demonstrate the reasons that conventional fall protection is unfeasible or constitutes a greater hazard and will provide alternative safety measures for review and acceptance by the COR.

10.12 Excavations: All open excavations made in the earth's surface four (4) foot or greater will be under the supervision of a competent person trained in, and knowledgeable about, soils analysis, the use of protective systems, and the requirements of OSHA 29 CFR 1926, Subpart P and EM 385-1-1, Section 25. The competent person shall be designated in writing by the Contractor and a resume of their training and experience submitted to the COR for acceptance.

10.12.1 Excavations hazards and methods for their control will be specified in the job hazard analysis.

10.12.2 Sloping and benching: The design of sloping and benching shall be selected from and in accordance with written tabulated data, such as charts and tables. At least one copy of the tabulated data will be maintained at the job site.

10.12.3 Support Systems: shall be in accordance with one of the systems outlined in a through c below:

- a. Designs drawn from manufacturer's specifications and in accordance with all specifications, limitations, and recommendations issued or made by the manufacturer. A copy of the manufacturer's specifications, recommendations, and limitations will be in written form and maintained at the job site.
- b. Designs selected from and in accordance with tabulated data (such as tables and charts). At least one copy of the design shall be maintained at the job site during excavation.
- c. Designed by a registered engineer. At least one copy of the design shall be maintained at the job site during excavation.

10.12.4 Excavations Greater than 20 Feet in Height: Sloping and benching or support systems shall be designed by a registered professional engineer. Designs shall be in writing and at least one copy of the design shall be maintained at the job site during excavation. The contractor will ensure that the registered

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

professional engineer is working within a discipline applicable to the excavation work; i.e. it would be inappropriate for an electrical engineer to approve shoring designed for an excavation.

10.13 **Confined Space:** Entry into and work in a confined space will not be allowed when oxygen readings are less than 19.5% or greater than 23.5% or if the lower explosive limit (LEL) reading is greater than 10%, unless these conditions are adequately addressed in the confined space entry plan. In addition, action levels for toxic atmospheres shall be determined and any other known or potential hazards eliminated prior to entry.

11.0 **LANGUAGE:** For each group that has employees that do not speak English, the Contractor will provide a bilingual foreman that is fluent in the language of the workers. The contractor will implement the requirements of EM 385-1-1, 01.B through these foremen.

12.0 **CONTRACTOR SAFETY MEETINGS AND DOCUMENTATION:** Contractor shall conduct and document safety meetings among its personnel as required by EM 385-1-1 and as indicated herein. Monthly meetings shall be held among all supervisors, and weekly meetings shall be conducted by supervisors or foreman for all workers. The agenda of the meeting shall include specific safety items pertinent to work being performed. Documentation shall include a summary of items discussed as well as other items required by the EM 385-1-1. Documentation shall be submitted to the Government monthly.

13.0 COORDINATION WITH OTHER SPECIFICATION SECTIONS:

The requirements of this section are meant to supplement requirements of other sections. In cases of discrepancies the most stringent requirements shall apply. Other safety-related requirements can be found in the following specification sections:

- a. Specification Section 00800, Special Contract Requirements
- b. Specification Section 00700, Contract Clauses, paragraph entitled "accident Prevention"
- c. Specification Section 01451 "Contractor Quality Control Design/Build Construction"
- d. Other specifications or contract requirements relating to site safety or health requirement or medical monitoring.

14.0 **CONTRACTOR PERFORMANCE APPRAISAL:** The occurrence of accidents and near misses due to negligence are strong indications that there has been insufficient emphasis on effective implementation and/or commitment to the accident prevention program. Should it become obvious that only lip service is being given to this program, an interim unsatisfactory performance appraisal rating will be issued. If safety continues to be unsatisfactory or marginal, the unsatisfactory rating will become final. The contractor should be aware that this appraisal will be stored in a national computer database which can be accessed by a multitude of agencies or municipalities desiring information on prospective contractors. An unsatisfactory rating in this database may affect the contractor's ability to obtain future Government work.

-End of Section-

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

SECTION 01451

**CONTRACTOR QUALITY CONTROL
DESIGN-BUILD CONSTRUCTION
FORT DRUM COE REV. 5/2003**

PART 1 – GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

U. S. ARMY CORPS OF ENGINEERS

ER 1110-1-12 Engineering and Design
 QUALITY MANAGEMENT

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 3740 (1996)	Evaluation of Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
ASTM E 329 (1995b)	Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

1.2 PAYMENT

No separate payment will be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the applicable unit prices or lump-sum prices contained in the Bidding Schedule.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 GENERAL

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Section 00700 Contract Clause titled "Inspection of Construction and shall implement the requirements of Appendix D, E, F, and G of ER 1110-1-12, Engineering and Design QUALITY MANAGEMENT. The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all design and construction operations, both onsite and offsite, and shall be keyed to the proposed design and construction sequence. Other sections of the contract documents may also require separate specially-qualified individuals. The CQC organization will coordinate the activities of

1st BRIGADE BARRACKS FORT DRUM, NEW YORK

these individuals. The project QC Manager will be held responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with quality requirements specified in the contract. The CQC Manager in this context shall mean the on-site individual with the responsibility for the overall management of the project including logistics and production.

QUALITY CONTROL ORGANIZATION

3.2.1 General

The Contractor shall furnish for review by the Government, not later than 10 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan (Design and Construction) proposed to implement the requirements of the Contract Clause titled "Inspection of Construction." The plan shall identify personnel, procedures, control, instructions, test, records, and forms to be used. The Government will consider an interim plan to cover design operations for the first 60 days. The complete CQC plan must then be submitted no later than 60 days after Notice to Proceed. Design and Construction will be permitted to begin only after acceptance of the CQC Plan or interim plan. The Contractor shall provide a CQC organization, which shall have complete authority to take any action necessary to ensure compliance with the contract. All CQC staff members shall be subject to acceptance by the Contracting Officer.

3.2.2.1 Contractor's Quality Control Manager: (Manager of Field and Office Quality Control Personnel)

- (1) Performs all quality control management duties required of the Contractor.
- (2) Serves as the Governments' primary point of contact in all matters relating to the quality of the work including, but not limited to, contract compliance and testing procedures.
- (3) The Contractor shall identify the CQC System Manager as an individual within his organization that is completely responsible for all Quality Issues and shall perform overall management of CQC system and have the authority to act in all CQC matters for the Contractor. This person shall at a minimum perform a monthly site visit and attend all partnering meetings to discuss, address quality issues during both design and construction and be on site during critical construction activities. This person shall be directly employed by the prime contractor (not a subcontractor) and shall have complete authority in all aspects of Quality Control. The prime contractor shall provide a letter to designate the duties and responsibilities of this person.

The Contractors Quality Control Manager shall meet the following requirement:

Have a Bachelors of Science from an accredited engineering, architecture, or a construction management college and a minimum of 4 years construction experience and a minimum of 4 years of design experience, at a minimum one of the years experience must have been as a Quality Control or Quality Assurance Representative.

- (4) Has no other duties except Quality Control.
- (5) Attends all job meetings.
- (6) Reports all deficiencies to the Government and the Contractor's Project Manager for correction.
- (7) Works directly under, and is responsible to the Project Manager.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

(8) An alternate for the CQC System Manager will be identified in the plan to serve in the event of the System Manager's absence. The requirements for the alternate will be the same as for the designated CQC System Manager. The CQC systems manager may serve as the Design/Construction Liaison, but if he/she takes on this additional duty then they must visit construction site three times a week.

3.2.2.2 Design Quality Control Manager: (Principal in Charge of Design Quality Issues and Coordination of Design Quality Control)

(1) The Contractor shall identify the Design Quality Control Representative as an individual employed by the design firm or by the prime contractor that is completely responsible for all Design Quality Issues and shall perform coordination between the contractor, subcontractors, and the designer and have the authority to act in all design quality control matters for the prime contractor. During design this person shall at a minimum perform a bi-monthly coordination meeting to discuss coordination and quality issues concerning the design of the project. During construction this person shall at a minimum perform a monthly site visit and attend all partnering meetings to discuss and address design quality issues. This person shall be employed by the design firm or by the prime contractor and shall have complete authority in all aspects design coordination and design quality control for the Prime contractor. The prime contractor shall provide a letter to designate the duties and responsibilities of this person.

(2) Attends during the design phase a bi-monthly coordination meeting to discuss coordination and quality issues. Hold a current state Professional Engineer's license. Have a Bachelors of Science from an accredited engineering, architecture, or a construction management college and a minimum of 6 years experience in design or design coordination.

(3) Has no other duties except Design Quality Control.

(4) Have complete authority in all aspects of design coordination and design quality control for the prime contractor.

(5) An alternate for the Design Quality Control Representative will be identified in the plan to serve in the event of the Representative 's absence. The requirements for the alternate will be the same as for the designated Design Quality Control Representative.

3.2.2.3 Construction Quality Control Manager: (Principal in Charge of Construction Quality Issues and Coordination of Construction Quality Control)

(1) The Contractor shall identify the Construction Quality Control Manager as an individual within his organization that is completely responsible for all Construction Quality Issues and shall perform coordination between the contractor, subcontractors, and any Independent Testing Labs and have the authority to act in all construction quality control matters for the prime contractor. During design this person shall at a minimum attend the bi-monthly coordination meeting to discuss coordination and quality issues concerning the design of the project. During construction this person shall be onsite at all times performing Construction Quality Control duties to include, but not limited to, implementation of the three-phase inspection system for all aspects of the construction work specified. This person shall have complete authority in all aspects of

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

Construction Quality control. The prime contractor shall provide a letter to designate the duties and responsibilities of this person.

(2) The Construction Quality Control Manager shall meet one of the following requirements:

a) Have a Bachelors of Science from an accredited engineering, architecture, or a construction management college and a minimum of 4 years experience in construction.

b) Shall have a minimum of 6 years of construction experience at a minimum level of a project superintendent.

(3) Attends a bi-monthly coordination meeting during the construction phase to discuss coordination and quality issues.

(4) On site at all times during construction performing construction quality control duties.

(5) Has no other duties except construction Quality Control.

(6) Directly employed by the prime contractor.

(7) An alternate for the Construction Quality Control Representative will be identified in the plan to serve in the event of the Representative's absence. The requirements for the alternate will be the same as for the designated Construction Quality Control Representative.

3.2.2.4 Design/Construction Liaison:

(1) Coordinates design activities throughout the life of the project for construction document development and construction activities.

(2) Must meet one of the following:

BS in engineering with a minimum of 4 years design experience; or

Four (4) years construction experience and a minimum of two (2) years experience in technical design coordination.

(3) Is allowable to perform the function of a Site Safety Officer, provided he/she meets the qualifications.

(4) Supervises the commissioning phase of the contract .

3.2.2.5 Design Team Leader:

(1) An individual having the leadership role in the production of the product.

(2) For engineering products this individual is the project engineer/architect (PE/A).

(3) For all projects the PE/A must be a registered professional.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

(4) This person is responsible for coordination between all disciplines, and ensures excellent integration of trades in both drawings and specifications.

3.2.2.6 ITR Team:

(1) Independent Technical Review (ITR) shall be preformed as follows, all design submissions are reviewed by a qualified person or team, not affiliated with the development of a project/product, for the purpose of confirming the proper application of clearly established criteria in the RFP, regulations, laws, codes, principles and professional procedures. It includes the verification of assumptions, methods, and level of complexity of the analysis. It also verifies the alternatives evaluated, appropriateness of data used, reasonableness of the results and functionality of the product relative to the customer's requirements.

Independent Technical Review Team (ITRT): An interdisciplinary group formed to perform the ITR.

ITRT Leader - The ITRT Leader is responsible for coordinating all activities associated with the technical review. This coordination includes receipt of review documents from the PE/A, distributing these documents to the ITRT members which may require coordinating the sharing of documents if there are not adequate copies for each member to have their own. The leader must also assure that the reviews are completed on schedule, collect the review comments from the various members and compile all comments into a single package. This package will then be provided to the PE/A. Additional responsibilities include:

- Assist the PE/A (when requested) in the development of the QCP Plan
- Attend the pre-design conference Determine the need for attendance at all major planning/design team meetings.
- Select review team members who will attend the selected planning/design team meetings for in-progress reviews
- Conduct a team meeting early in the QC process to assure an understanding by the ITRT of the role and responsibility of each member
- Assure that ITR comments have been incorporated into the certified final design
- Obtaining signatures of ITRT members for the ITR certification and providing certification to PE/A

ITRT Members - The ITRT Member is responsible for performing an Independent Technical Review of the assigned planning/design component. Whenever the review calls for a level of specialized knowledge, experience, or training not possessed by ITRT members, the ITRT leader and the ITRT members will seek assistance from district functional chiefs in finding appropriate sources of review expertise within or outside the district. In addition are responsible for:

- Signing ITR certification

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- Assuring his/her ITR comments have been incorporated into the certified final design
- ITR members must have minimum 10 years experience in their field of review and be a senior engineer in their field

3.2.2.7 The proposed design team shall, as a minimum, be comprised of the following disciplines: Architect, Civil Engineer, Structural Engineer, Mechanical Engineer, Electrical Engineer, Fire Protection and Geotechnical Engineer. At least one person in a lead role of each discipline must be registered to practice in their professional field of engineering in the United States or its possessions (52.236-0025).

3.2.3 Additional Requirement for CQC System Manager, Design Quality Control Manager, Construction Quality Control Manager and Design/Construction Liaison

In addition to the above experience and education requirements the CQC System Manager and the Construction Quality Control Representative shall have completed within the last five years the course entitled "Construction Quality Management for Contractors". This course is given by Government personnel and is of two-day duration. The Government will provide one instruction manual for the course.

3.2.4 Organizational Expertise

The CQC organization, which includes the CQC System Manager and additional qualified personnel, must as a minimum possess general corporate technical knowledge of all aspects of the project, and must successfully execute the CQC System on all aspects of the project. Individuals possessing experience in specialized areas shall be added to the organization as required during periods when such specialty areas are being executed. Examples of such specialized areas would include but are not limited to Designers of Record, Independent Technical Reviewers, Electrical design, Structural design, Seismic design, Environmental design, Mechanical design, Communications design, Fire protection design, HVAC, electrical distribution and substations, roofing, tele-communication systems, fire protection and alarm systems, computer installations, specialized welding, specialized finishes, precast concrete installation, modular housing, specialized geotech work, dredging, sand placement and surveying, chemical data acquisition, hazardous material removal and disposal, medical monitoring, etc., depending on the nature of the particular project. The Contractor must demonstrate that such additional qualified personnel have received sufficient training and indoctrination into the CQC system, and that these personnel properly execute the requirements of the CQC System within their areas of expertise.

3.2.5 Project Specific Organization

3.2.5.1 Contractor's Quality Control Organization shall meet at a minimum one of the following:

a) The contractor shall employ a minimum of four people 1) CQC Systems Manager (Overall Manager), 2) A Construction Quality Control Manager, 3) a Design Quality Control Manager reports to the CQC Systems Manager. These people shall be assigned no duties other than Quality Control, 4) Design/Construction Liaison reports to the CQC Systems Manager. These people shall be assigned no duties other than Quality Control.

3.2.6 Organizational Changes

1st BRIGADE BARRACKS FORT DRUM, NEW YORK

The Contractor shall maintain the CQC Organization at full strength at all times. When it is necessary to make changes to the organization, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

i. The Offerors are advised that substitution of proposed key personnel will not be permitted unless approved by the Contracting Officer/ Source Selection Authority and an administrative modification to the contract is issued to incorporate the change. The authority for substitution of key personnel lies solely with the Contracting Officer and will not be delegated to the ACO or COR.

ii. Substitution of key personnel will only be allowed under the following conditions:

- Change of Employment
- Would pose hardship upon the employee which was not known at the time the proposal was submitted
- Sickness or death
- A bait and switch of team members from proposal to execution phase is not allowed

iii. Any proposed team member replacement shall meet or exceed the qualifications noted in the specifications for their specialty.

3.3 QUALITY CONTROL

3.3.1 General

The Contractor shall furnish for review by the Government, not later than 10 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause titled "Inspection of Construction." and shall implement the requirements of Appendix D, E, F, and G of ER 1110-1-12, Engineering and Design QUALITY MANAGEMENT. The plan shall identify personnel, procedures, control, instructions, test, records, and forms to be used. The Government will consider an interim plan to cover design operations for the first 60 days. The complete CQC plan must then be submitted no later than 60 days after Notice to Proceed. Design and Construction will be permitted to begin only after acceptance of the CQC Plan or interim plan.

3.3.2 Design Quality Control (DQC) System

The Contractor shall provide and maintain an effective quality control program which will assure that all design services and products required for construction of this design-build contract are performed and provided in a manner that meets professional architectural and engineering quality standards and the requirements of the contract. The Contractor shall include elements and details of the DQC program in the CQC Plan.

As a minimum, all design documents shall be technically reviewed by competent (Min 5 years experience one person per discipline) independent reviewers identified in the DQC Plan. The same element that produced the product shall not perform the independent technical review (ITR). In the DQC section of the CQC Plan the contractor shall cross-reference the Lessons Learned Databases provided by the Government. As a part of the ITR the team shall hold a coordination meeting for purposes of back check and review, all designers and Independent technical reviewers shall attend.

The Contractor shall correct errors and deficiencies in the design documents prior to submitting them to the Government.

1st BRIGADE BARRACKS FORT DRUM, NEW YORK

Design Schedule: The procedure for design schedule shall be included in the DQC portion of the CQC Plan. The Contractor shall include the design schedule in the master project schedule, showing the sequence of events involved in carrying out the project tasks within the specific contract period. This should be at a detailed level of scheduling sufficient to identify all major tasks including those that control the flow of work. The schedule shall include review and correction periods associated with each item. This should be a forward planning as well as a project monitoring tool. The schedule must reflect calendar days and not dates for each activity. If the schedule is changed, the Contractor shall submit a revised schedule reflecting the change within seven calendar days. Design schedule shall be coordinated with specification section "Project Schedule".

The Contractor shall include in the DQC portion of the CQC Plan the discipline-specific checklists to be used during the design and quality control of each design submittal. These completed checklists shall also be submitted at each design phase as part of the project documentation. Sample checklists can be found in Corps of Engineers Engineering Regulations ER 1110-1-12, available on the internet.

DQC shall be implemented by an assigned person with the A/E Firm who has the responsibility of being present during the times design work is in progress shall be cognizant of and assure that all documents on the project have been coordinated and that appropriate submittals of design products are current. This individual shall be a person who has verifiable engineering or architectural design experience and is a registered professional engineer or architect. Contractor shall indicate the name qualifications and responsibility and notify the Contracting Officer, in writing, of the name of the individual and the name of an alternate person assigned to the position.

Construction Contractor shall have an Engineer Design liaison to coordinate design activities throughout the life of the project for construction document development and construction activities. The Design Liaison will be a 4-year degreed engineer with a minimum of 4 years of design experience OR 4 years of construction experience, and have at a minimum at least two of the years of experience must be technical design coordination. In addition to performing the functions of a Engineer Design liaison it is allowable for this person to perform the function of a Site Safety Officer provided he/she meets the qualifications.

Design Quality Control is the processes used to assure performance meets agreed upon customer requirements that are consistent with law, regulations, policies, sound technical criteria, schedules, budget and RFP requirements. Quality Control consists of a multitude of processes and procedures to ensure quality products are produced. It begins with the selection of a highly qualified design team, the preparation of a Quality Control plan, appropriate supervisory guidance, and continuous/seamless independent review. One of the more visible processes is the Independent Technical Review (ITR).

a. Design Quality Control Plan (QCP) is a written plan prepared for each product which establishes the agreed upon requirements of the customer. The plan identifies the ITRT (including technical area of responsibility of each member) and its responsibilities, and the procedures that will be employed to ensure compliance with appropriate laws, regulations, policies and technical criteria.

b. Design Accountability - Quality control must begin with design team members and therefore design accountability becomes an integral part of design execution. The level of accountability placed on design team members is as defined by NYS PE Registration.

c. Design Team Leader is an individual having the leadership role in the production of the product. For engineering products this individual is the project engineer/architect (PE/A). For all projects the PE/A must be a registered professional. This person is responsible for coordination between all disciplines.

d. Independent Technical Review (ITR) shall be performed as follows, all design submissions are reviewed by a qualified person or team, not affiliated with the development of a project/product, for the

1st BRIGADE BARRACKS FORT DRUM, NEW YORK

purpose of confirming the proper application of clearly established criteria, regulations, laws, codes, principles and professional procedures. It includes the verification of assumptions, methods, and level of complexity of the analysis. It also verifies the alternatives evaluated, appropriateness of data used, reasonableness of the results and functionality of the product relative to the customer's requirements.

Independent Technical Review Team (ITRT): An interdisciplinary group formed to perform the ITR.

e. ITRT Leader - The ITRT Leader is responsible for coordinating all activities associated with the technical review. This coordination includes receipt of review documents from the PE/A, distributing these documents to the ITRT members which may require coordinating the sharing of documents if there are not adequate copies for each member to have their own. The leader must also assure that the reviews are completed on schedule, collect the review comments from the various members and compile all comments into a single package. This package will then be provided to the PE/A. Additional responsibilities include:

- Assist the PE/A (when requested) in the development of the QCP
- Attend the pre-design conference Determine the need for attendance at all major planning/design team meetings.
- Select review team members who will attend the selected planning/design team meetings for in-progress reviews
- Conduct a team meeting early in the QC process to assure an understanding by the ITRT of the role and responsibility of each member
- Assure that ITR comments have been incorporated into the certified final design
- Obtaining signatures of ITRT members for the ITR certification (Appendix B) and providing certification to PE/A

f. ITRT Members - The ITRT Member is responsible for performing an Independent Technical Review of the assigned planning/design component. Whenever the review calls for a level of specialized knowledge, experience, or training not possessed by ITRT members, the ITRT leader and the ITRT members will seek assistance from a qualified engineer in this area.

- Signing ITR certification
- Assuring his/her ITR comments have been incorporated into the certified final design
- ITR members must have minimum 5 years experience in their field of review and be a senior engineer in their field

g. Independent Technical Reviews (ITR) The A/E shall perform an ITR during each phase of the design development. These ITRs will be conducted by qualified engineers (one Per discipline) who are not part of the design team or a supervisor of a design team member. Formal written comments will be generated by each member of the ITR team and annotated by the designers to indicate the intended corrective action. These corrective actions will be incorporated into the design during the same phase in which the review is conducted, prior to submission to the Government. Copies of annotated ITR review comments

1st BRIGADE BARRACKS FORT DRUM, NEW YORK

and certification statements shall be furnished as an appendix to the Design Analysis. ITR certifications shall be certified by one of the firm's principles or authorized representatives.

h. Internal Review Process (Technical Check): Detailed review and design checks, which must be carried out as routine management practice. Such review includes checking basic assumptions and calculations. These checks are performed by staff responsible for the work, such as supervisors, work leaders, team leaders, or designated individuals from the senior staff and shall be performed prior to ITR of the deliverable. A design check should include a comprehensive evaluation of:

- the correct application of methods,
- adequacy of basic data,
- correctness of calculations (error free),
- completeness of documentation,
- compliance with guidance and standards, and RFP
- biddability, constructibility, and operability

i. Professional Accountability: This is a term specifically developed for this policy statement which represents a level of demonstrated design competency which would be expected of a registered design professional (engineer or architect) operating within acceptable standards as set forth by applicable state registration authority. The definition does not include the concept of design responsibility from a legal standpoint (civil or criminal liability) or design liability from a financial standpoint but does include the concept of design acceptability from a state licensing board's perspective. The concept of professional accountability is used as a measurement of adequate performance for those individuals providing architectural or engineering design functions. This standard does not require professional registration (except for the PE/A) but does require performance that is equivalent to that required of a registered professional.

j. Quality Certification: Formally signed certification document attesting to completion of the so-specified QC or QA activities and responsibilities. These will vary depending on how the design is accomplished as described below:

k. QC Certification For Contractor (AE) Certification – The A/E's Design Team and the ITRT sign a certificate verifying that the QC process for that product has been completed as described in the QCP. The process also includes the requirement for the Principal of the AE firm, to certify that an independent technical review has been conducted.

l. QA Audit: The evaluation of the quality control process and procedures through selective inspection of products, meetings, or production related activities. QA audits of products will not duplicate the technical review. Audits of meetings and inspections will be for the purpose of process improvement and technical oversight.

m. Seamless Review: Continual interaction and in-progress reviews made by members of the ITRT during product preparation.

3.3.3 CQC Plan

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

The CQC plan shall include, as a minimum, the following to cover all design and construction operations, both onsite and offsite, including work by subcontractors, designers of record, consultants, architect/engineer's (A/E's), fabricators, suppliers, and purchasing agents:

- a. Details of the DQC system indicated above in Section 3.3.2.
- b. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three-phase control system for all aspects of the work specified. The staff shall include a CQC System Manager who shall report to the project manager or someone higher in the Contractor's organization. Project manager in this context shall mean the individual with responsibility for the overall management of the project including quality and production.
- c. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function. A clear indication that CQC System Manager, Design Quality Control Manager, and the Construction Quality Control Manager will have no duties other than Quality Control.
- d. A copy of the letter to the CQC System Manager, Design Quality Control Manager, Design/Construction Liaison, and Construction Quality Control Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of particular title, including authority to stop work, which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters will also be furnished to the Government.
- e. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, designers of record, consultants, A/E's, off-site fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01330 SUBMITTAL PROCEDURES
- f. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities will be approved by the Contracting Officer.) The Contractor shall incorporate all tests required by the contract (including systems commissioning and operating tests) to derive the above list of testing information, which shall be presented in matrix form as part of the CQC Plan. This matrix shall be suitable for use by the Contractor and the Government as a checklist to control testing to be done on the contract. Coordinate any additional test submission or plan requirements for Mechanical and Electrical Systems with appropriate specialized specification section if applicable.
- g. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation. Provide matrix of Preparatory and Initial inspections including specification reference paragraph, name of the Definable Feature of Work, and spaces for date performed, results and names of attendees.
- h. Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures will establish verification that identified deficiencies have been corrected.
- i. Reporting procedures, including proposed reporting formats. The Contractor shall utilize a Government-furnished software program titled "QCS" (Quality Control System). See specification section QUALITY CONTROL SYSTEM for additional details. Sample forms from QCS will be submitted with CQC Plan.

1st BRIGADE BARRACKS FORT DRUM, NEW YORK

j. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks and has separate control requirements. It could be identified by different trades or disciplines, or it could be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there is frequently more than one definable feature under a particular section. This list will cover all features of work on the project, and will be agreed upon during the coordination meeting.

k. A brief explanation of the duties of the CQC organization with respect to safety. Note that separate Accident Prevention Plan and Hazards Analysis is required for submission and acceptance.

l. Contractor's plan for training all CQC personnel in the CQC System.

3.3.4 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of design and/or construction. Acceptance is conditional and will be predicated on satisfactory performance during the design and construction phases. The Government reserves the right to require the Contractor to make changes in his CQC plan and operations including removal of personnel, as necessary, to obtain the quality specified.

3.3.5 Notification of Changes

After acceptance of the CQC plan, the Contractor shall notify the Contracting Officer in writing a minimum of seven calendar days prior to any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

3.4 COORDINATION MEETING

After the Pre-design Conference, before start of design and/or construction, and prior to acceptance by the Government of the Quality Control Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. The CQC Plan shall be submitted for review a minimum of 14 calendar days prior to the Coordination Meeting. The initial plan submitted must be found acceptable by the Government before the Coordination Meeting can be held. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, design activities, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

3.5 SUBMITTALS

For purposes of this contract, the term submittals refers to both design submittals and shop-drawing type submittals. Submittals shall be made as specified in Section 01330 SUBMITTAL PROCEDURES and as specified in Section 01012 Design after Award. The CQC organization shall be responsible for certifying that all submittals are in compliance with the contract requirements and are submitted in accordance with the schedule. CQC personnel shall also make physical checks of materials and equipment before installation to insure compliance with approved shop drawings.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

3.6 CONSTRUCTION QUALITY CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the Construction and Design, to include that of the designers, subcontractors, and suppliers, complies with the requirements of the contract. At least three phases of control shall be conducted by the Construction Quality Control Representative for each definable feature of work as follows:

3.6.1 Preparatory Phase

This phase shall be performed prior to beginning work on each definable feature of work after all required plans/documents/materials are approved/accepted, and after copies are at the worksite, and shall include:

- a. A review of each paragraph of applicable specifications.
- b. A review of the contract drawings.
- c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.
- d. Review of provisions that have been made to provide required control inspection and testing.
- e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.
- f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.
- g. A review of the appropriate activity hazard analysis to assure safety requirements are met per EM 385-1-1, "Safety and Health Requirements Manual".
- h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.
- i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.
- j. Discussion of the initial control phase.
- k. The Government shall be notified at least 48 hours in advance of beginning the preparatory control phase meeting. This phase shall include a meeting conducted by the Construction Quality Control Representative and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the Construction Quality Control Representative and attached to the daily CQC report. The Contractor shall clearly indicate its intent and plan for communication of the results of the preparatory phase to applicable workers, to include materials, construction methods, workmanship standards, safety considerations and procedures, and preparatory phase meeting minutes.

3.6.2 Initial Phase

1st BRIGADE BARRACKS FORT DRUM, NEW YORK

This phase shall be accomplished at the beginning of a definable feature of work (DFW) when the accomplishment of a representative sample of the work is impending. The following shall be accomplished:

- a. A check of the portion of work done to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.
- b. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.
- c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.
- d. Resolve all differences.
- e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.
- f. The Government shall be notified at least 48 hours in advance of beginning the initial phase meeting. This phase shall include a meeting conducted by the Construction Quality Control Representative and attended by the superintendent, other CQC personnel (as applicable), the foreman responsible for the definable feature and the work crew(s) for the appropriate DFW. Separate minutes of this phase shall be prepared by the Construction Quality Control Representative and attached to the daily CQC report. Exact location (i.e. CQC Report number) of initial phase shall be indicated for future reference and comparison with follow-up phases.

3.6.3 Follow-up Phase

Daily checks shall be performed to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work which may be affected by the deficient work. The Contractor shall not build upon or conceal non-conforming work

3.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on the same definable features of work if the quality of on-going work is unacceptable, if there are changes in the applicable CQC staff, onsite production supervision or work crew, if work on a definable feature is resumed after a substantial period of inactivity, or if other problems develop.

3.6.5 Definable Feature of Work: Definition and Discussion

A Definable Feature of Work (DFW) is a portion of work consisting of materials, equipment, supplies and procedures which are closely related to each other, have the same control and will be accomplished by the same work crew to completion. A DFW must be sufficiently small so that control of the work (i.e. communication of requirements to workers, inspection of materials and workmanship and correction of deficiencies) will be easily accomplished. Some examples for various types of projects are:

* Rough-in of electrical boxes and wiring methods

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- * Lighting fixtures, receptacles, and accessories
- * Panelboards, circuit breakers and motors.
- * Water supply piping, fittings and supports
- * DWV piping, fittings and supports for plumbing
- * Concrete reinforcement and formwork
- * Concrete mixing, placement, curing and finishing
- * Testing Procedure for contaminated soil, materials and storage tank contents
- * Storage Tank disassembly and removal
- * Setting up of decontamination area, exclusion zones and standard safety procedures for asbestos removal
- * Asbestos removal and disposal procedures
- * Chemical Data Acquisition
- * Preparation, removal and disposal of contaminated material
- * Dredging and placement.

3.7 TESTS

3.7.1 Testing Procedure

The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a laboratory which has been assurance inspected by the Corps of Engineers within the last two years. The Contractor shall perform the following activities and record and provide the following data:

- a. Verify that testing procedures comply with contract requirements.
- b. Verify that facilities and testing equipment are available and comply with testing standards.
- c. Check test instrument calibration data against certified standards.
- d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.
- e. Results of all tests taken, both passing and failing tests, will be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control

1st BRIGADE BARRACKS FORT DRUM, NEW YORK

number identifying the test will be given. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of tests performed by an off site or commercial test facility will be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract. The Contractor shall maintain a test log of all tests performed, by type, date, and specification section.

3.7.2 Testing Laboratories

3.7.2.1 Capability Check

The Government reserves the right to check laboratory equipment and calibration in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, aggregate and steel shall meet criteria detailed in ASTM D 3740 and ASTM E 329. The Government requires a Corps of Engineers capability check of the laboratory which the contractor proposes to perform tests on soils, concrete, asphalt, aggregate and steel. If the laboratory proposed has not had the required Corps of Engineers capability check within the last two years, it will be performed by the Corps of Engineers at a cost of \$7200 to the Contractor. This cost will be paid by the Contractor via check directly to the Corps of Engineers Laboratory performing the inspection and report.

3.7.2.2 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed a charge of \$7200 to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory.

3.7.3 On-Site Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

3.7.4 Furnishing or Transportation of Samples for Testing

Costs incidental to the transportation of samples or materials will be borne by the Contractor. Samples of materials for test verification and acceptance testing by the Government shall be delivered to the Corps of Engineers Division Laboratory, as designated by the Government Representative. Coordination for each specific test, exact delivery location and dates will be made through the Area Office.

3.8 COMPLETION INSPECTION

3.8.1 Punch-Out Inspection

Near the completion of all work or any increment thereof established by a completion time stated in the Special Clause entitled "Commencement, Prosecution, and Completion of Work," or stated elsewhere in the specifications, the Construction Quality Control Representative shall conduct an inspection of the work and develop a "punch list" of items which do not conform to the approved drawings and specifications. Such a list of deficiencies shall be included in the CQC documentation, as required by paragraph DOCUMENTATION below, and shall include the estimated date by which the deficiencies will be corrected. The Construction Quality Control Representative or staff shall make a second

1st BRIGADE BARRACKS FORT DRUM, NEW YORK

inspection to ascertain that all deficiencies have been corrected. Once this is accomplished the Contractor shall notify the Government that the facility is ready for the Government's "Pre-final" inspection.

3.8.2 Pre-Final Inspection

The Government will perform this inspection to verify that the facility is complete and ready to be occupied. A Government "Pre-Final Punch List" may be developed as a result of this inspection. The Contractor's Construction Quality Control Representative shall ensure that all items on this list have been corrected before notifying the Government so that a Final inspection with the customer can be scheduled. Any items noted on the Pre-Final inspection shall be corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph shall be accomplished within the time slated for completion of the entire work or an particular increment thereof if the project is divided into increments by separate completion dates.

3.8.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative shall be in attendance at this inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil Facility Engineer user groups, and major commands may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final inspection. Notice shall be given to the Contracting Officer at least 14 days prior to the final acceptance inspection and shall include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the contract clause titled "Inspection of Construction".

3.8.4 Post Completion Feedback Meeting and Preparation of Written Minutes

At the completion of this project, the Construction Quality Control Representative will host a meeting to review the project and to discuss lessons learned during the construction of the project. This meeting should be scheduled for 4 hours on-site and should be attended by the Project Manager and representatives of the major subcontractors, including mechanical and electrical. The Contracting Officer and Project Manager will invite members of the government, design and construction team to participate in this meeting.

3.9 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

- a. Contractor/subcontractor and their area of responsibility.
- b. Operating plant/equipment with hours worked, idle, or down for repair.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.
- d. Test and/or control activities performed with results and references to specifications/drawings requirements. The control phase should be identified (Preparatory, Initial, Follow-up). List deficiencies noted along with corrective action.
- e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.
- f. Submittals reviewed, with contract reference, by whom, and action taken.
- g. Offsite surveillance activities, including actions taken.
- h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
- i. Instructions given/received and conflicts in plans and/or specifications.
- j. Contractor's verification statement.

These records shall indicate a description of trades working on the project; the number of Personnel working; weather conditions encountered; and any delays encountered. "N/A" shall be entered into any field for which no entry is intended. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. The original and one copy of these records in report form shall be furnished to the Government daily within 16 hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every 7 days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the Construction Quality Control Representative. The report from the Construction Quality Control Representative shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel. All documentation is expected to be literate, legible and complete.

3.9.1 Correspondence

The Contractor shall establish and implement a serialized numbering system for letters sent to the Government. The numbering system shall identify the contract number and shall progress sequentially starting with the number one (1) and continuing thereafter without break in numbering. All letters sent to the Government shall include a subject heading which identifies the Contract Clause Number, Special Clause Number, or Technical Provision Number, and the particular subject item addressed by the letter.

3.10. SAMPLE FORMS

(Note: If the Quality Control System (QCS) is required to be used by the contractor for the QC System as indicated elsewhere in this contract, Contractor will generate all reports in the QCS System, and attached forms will serve as guidance only. Otherwise forms contained herein will be used by the by CQC Staff for CQC System reporting

- a. The 2-page form at the end of the section will be used for the basic CQC Report. CQC personnel shall attach continuation sheets as required for any entries which cannot fit on the basic form. Preparatory and

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

Initial Inspections, when performed, shall be indicated on the basic CQC report and minutes for each inspection shall be attached. Minutes will consist of a list of specific requirements for materials, procedures or equipment to be employed and shall also include any understandings reached or items of special importance discussed.

b. In addition, outstanding deficiencies shall be listed on the form "List of Outstanding Deficiencies" at the end of this section and shall be attached to each CQC report. As deficiencies are corrected, they are to be acknowledged on the basic CQC report and shall be deleted from the list.

c. Form at the end of this section entitled "CQC Test Report List" shall be used by the Contractor to track testing to be done as the project progresses, and also to summarize the Contractor's Quality Control testing to be reported on the CQC Plan.

d. Form "Record of Preparatory and Initial Inspections" at the end of this section shall be used by the Contractor to track Preparatory and Initial inspections as the project progresses and also to summarize these required inspections as part of the CQC Plan.

e. Additional reporting forms pertaining to specialized activities may be included herein or elsewhere in the contract, and shall be used for reporting as indicated.

3.11 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the worksite, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor. Deficiencies cited and verbal instruction instructions given to the Contractor by the Government Representative shall be entered into that day's CQC report.

(FORMS FOLLOW)

--- End of Section ---

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

SECTION 01452

TESTING FOR MECHANICAL AND ELECTRICAL SYSTEMS
NY Dist. Sept. 2003

1. Applicability.

This section applies to all mechanical and electrical systems and all systems using electromagnetically driven equipment, pneumatic or electronic systems; high and low voltage electrical distribution systems (except branch panels) and to any system which incorporates this section into other parts of the specification by reference. For purposes of this section a "system" is an entity comprised of a series of closely related interdependent components and which is capable of independent performance of a useful function. System components shall include all software and programming as applicable for the system. Some typical examples include:

- a. Independently functioning HVAC Systems.
- b. Fire Alarm Systems.
- c. Public Address Systems.
- d. Sprinkler Systems including alarms.
- e. Telephone Systems including line protectors, splices cables, switching equipment, outlets and instruments.
- f. Intrusion Detection System.
- g. High Voltage Equipment including cable, splices, switchgear, relays, circuit breakers, fuses, transformers, instrumentation, etc.
- h. Low Voltage Switchboard including incoming and outgoing feeders, circuit protection and all accessories.

2. Test Plan.

a. Not later than sixty days after Notice to Proceed, in accordance with Section "Submittals" and other paragraphs of the technical provisions, the Contractor shall submit a list for approval consisting of all systems for which test plans are required. This list will be reviewed by the Government and any systems found to be missing will be required to be added by the Contractor, and appropriate test plans submitted. No work will be permitted on any of the above systems until this list is submitted.

b. The Contractor shall develop test plans and schedule operational testing for the systems in the approved list. The testing shall be in accordance with the requirements in the appropriate technical provisions and shall include as a minimum the requirements below. All testing required by applicable codes, standards, utility companies, manufacturers, suppliers, etc. shall be incorporated into the Contractor's test plans. Test plans shall list all equipment required to perform the tests, and any Government support required. It shall be in sufficient detail to permit a step-by step approach to the test and to demonstrate that the systems operate as intended by the contract documents. It shall describe as a

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

minimum:

1. What system is being tested including a listing of all components to be tested.
 2. What individual or organization will perform testing, who will certify the tests, and qualifications of test personnel
 3. A step by step narrative of the testing procedure to be used to demonstrate contract compliance including all governing standards, such as "sequence of controls", "ASTM Standard XXX"; or IEEE Standard XXX", etc.
 4. What testing equipment will be utilized.
 5. What operator interaction is required.
 6. What results are to be expected.
 7. Seasonal limitations, if any, including date(s) of proposed testing.
 8. A complete schematic diagram (electrical, pneumatic) showing all components, and block diagram.
 9. A checklist shall be developed to be used during the operational test.
- c. Test plans shall be submitted for approval for all systems contained on the list submitted per para. 2a above. It is also desirable to submit all test plans as soon as possible so that the progress of the project and corresponding payments will proceed on schedule.

3. Testing Process.

a. Outlined below are a number of events relating to the status of the test plan and testing. The corresponding percentages indicate the maximum percentage of the value of the system which will be permitted to be installed after the successful completion of the corresponding event indicated, for all systems to which this section applies. Events must be completed sequentially. Any work performed in excess of the permitted percentages will be at the Contractor's own risk and will not be paid until the event corresponding to the percentage of system value permitted to be installed is successfully completed:

EVENT	MAX. % of SYSTEM VALUE PERMITTED TO BE INSTALLED
1. Contractor has submitted list of systems that require test plans to be approved, and system work is ongoing but no test plan submitted.	50
2. Test Plan Submitted	65
3. *Test Plan Approved	80

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

4. Successful completion of tests including submission of required documents, reports (i.e. balancing reports for all HVAC Systems), Operation and Maintenance Manuals spare parts, and spare parts data.

**100

* The Government will process the submittal in accordance with the time frames indicated in the specification section "Submittals". If the test plan is disapproved the Government has an additional 30 days to review the resubmittal from the date it receives the resubmittal.

**If a system involves both heating and cooling modes and one mode has been successfully tested this percentage shall be reduced to 90% until the testing is completed.

b. The Contractor may proceed with events as indicated in the above table for each system separately.

4. Operational tests including performance tests shall be conducted for an entire system, not component parts only. Tests may be conducted only after an entire system has been completely installed. Contractor shall provide a minimum of 14 days notice to the Contracting Officer of scheduled tests. This notice must include the Contractor's assurance that all installed work previously identified to the Contractor as being unacceptable along with all remaining work associated with the respective system will be complete and acceptable by the date scheduled for the operational test. Failure of the Contractor to have all contract work acceptably complete for this test will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection costs.

5. For each system the Contractor shall obtain the services of an experienced professional who shall certify that the operational test was conducted in accordance with the approved test plan and the results of this test meet all the contract requirements. These individuals must have a minimum of eight years experience in the testing of the particular system being tested and shall also meet qualifications (if any) set forth in other technical sections of the contract specifications.

6. For Design-Build projects, the Contractor's Designer of Record for the system shall participate in HVAC System Commissioning.

7. When considering the value of a system for payment purposes the following components shall be counted as part of a "system": All electro-magnetically driven equipment; pneumatic or electric control system; gauges, dampers, valves, actuators, controllers, pipes, test sensing elements, logic/processors, CPU's, ducts, insulation, wiring, conduit, switchgear, and all other mechanical or electrical components, devices or equipment which are essential to the proper function of the system such as pumps, motors, air-handling units, chillers, cooling towers, etc. Software programs and any refrigerants are also considered "parts" of a system.

8. The requirements contained in this section supplement other testing requirements contained in the contract documents. If a conflict exists between the requirements of this section and other parts of the contract documents, the requirements of this section shall take precedence.

--End of Section--

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

SECTION 01525

SAFETY REQUIREMENTS
09/00

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI A10.14 (1991) Construction and Demolition Operations - Requirements for Safety Belts, Harnesses, Lanyards and Lifelines for Construction and Demolition Use

ANSI Z359.1 (1992) Safety Requirements for Personal Fall Arrest Systems

ASME INTERNATIONAL (ASME)

ASME B30.5 (1994) Mobile Cranes

ASME B30.22 (1993) Articulating Boom Cranes

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1910.94 Ventilation

29 CFR 1910.120 Hazardous Waste Operations and Emergency Response

29 CFR 1926.65 Hazardous Waste Operations and Emergency Response

29 CFR 1926.502(f) Warning Line Systems

U.S. ARMY CORPS OF ENGINEERS (USACE)

COE EM-385-1-1 (1996) Safety and Health Requirements Manual
<http://www.usace.army.mil/inet/usace-docs/eng-manuals/em385-1-1/toc.htm>

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 10 (1995) Portable Fire Extinguishers

NFPA 70 (1999) National Electrical Code

NFPA 241 (1996) Safeguarding Construction, Alteration, and Demolition Operations

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

1.2 DEFINITIONS

- a. Competent Person. A competent person is one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.
- b. Confined Space. A space which by design has limited openings for entry and exit, unfavorable natural ventilation which could contain or produce dangerous air contaminants, and which is not intended for continuous employee occupancy. Confined spaces include, but are not limited to storage tanks, process vessels, pits, silos, vats, degreasers, reaction vessels, boilers, ventilation and exhaust ducts, sewers, tunnels, underground utility vaults, and pipelines.
- c. First Aid. First aid is any one-time treatment, and any follow-up visit for the purpose of observation, of minor scratches, cuts, burns, splinters, and so forth, which do not ordinarily require medical care, even though provided by a physician or registered professional personnel.
- d. Lost Workdays. The number of days (consecutive or not) after, but not including, the day of injury or illness during which the employee would have worked but could not do so; that is, could not perform all or part of his normal assignment during all or any part of the workday or shift; because of the occupational injury or illness.
- e. Medical Treatment. Medical treatment includes treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even though provided by a physician or registered personnel.
- f. Multi-employer work site (MEWS). A multi-employer work site, as defined by OSHA, is one in which many employers occupy the same site. The Government considers the prime contractor to be the "controlling authority" for all work site safety and health of the subcontractors.
- g. Operating Envelope. There is an "operating envelope" around any crane, and inside the envelope are the operator, riggers, rigging gear between the hook and the load, the load and the crane's supporting structure (ground, rail, etc.).
- h. Qualified Person. One who, by possession of a recognized degree, certificate, or professional standing, or extensive knowledge, training, and experience, has successfully demonstrated his or her ability to solve or resolve problems related to the subject matter, the work or the project.
- i. Recordable Occupational Injuries or Illnesses. Any occupational injuries or illnesses which result in:
 - (1) Fatalities, regardless of the time between the injury and death, or the length of the illness; or
 - (2) Lost Workday Cases, other than fatalities, that result in lost workdays, or

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- (3) Non-Fatal Cases without lost workdays which result in transfer to another job or termination of employment, or require medical treatment (other than first aid) or involve: loss of consciousness or restriction of work or motion. This category also includes any diagnosed occupational illnesses which are reported to the employer but are not classified as fatalities or lost workday cases.
- j. Safety Officer. The superintendent or other qualified or competent person who is responsible for the on-site safety required for the project. The contractor quality control person cannot be the safety officer, even though the QC has safety inspection responsibilities as part of the QC duties.
- k. Serious Accidents. Any work-related incident, which results in, a fatality, in-patient hospitalization of three or more employees, or property damage in excess of \$200,000.
- l. Significant Accident. Any contractor accident which involves falls of 1.2 m or more, electrical accidents, confined space accidents, diving accidents, equipment accidents, crane accident or fire accidents, which, result in property damage of \$10,000 or more, but less than \$200,000; or when fire department or emergency medical treatment (EMT) assistance is required.
- m. Weight Handling Equipment (WHE) Accident. A WHE accident occurs when any one or more of the six elements in the operating envelope fails to perform correctly during operation, including operation during maintenance or testing resulting in personnel injury or death; material or equipment damage; dropped load; derailment; two-blocking; overload; and collision, including unplanned contact between the load, crane, and/or other objects. A dropped load, derailment, two-blocking, overload and collision are considered accidents even though no material damage or injury occurs. A component failure (e.g., motor burnout, gear tooth failure, bearing failure) is not considered an accident solely due to material or equipment damage unless the component failure results in damage to other components (e.g., dropped boom, dropped load, roll over, etc.).

1.3 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures."

SD-07 Certificates

Accident Prevention Plan (APP); G

Activity Hazard Analysis (AHA); G

Health and Safety Plan (HASP); G

SD-11 Closeout Submittals

Daily Confined Space Entry Permit

Submit one copy of each permit attached to each Daily Production Report.

Reports

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

Submit reports as their incidence occurs, in accordance with the requirements of the paragraph 1.4.4 entitled, "Reports."

Crane Reports

Crane Critical Lift Plan

Certificate of Compliance

1.4 QUALITY ASSURANCE

1.4.1 Qualifications

a. Qualifications of Safety Officer:

- (1) Ability to manage the on-site contractor safety program through appropriate management controls.
- (2) Ability to identify hazards and have the capability to expend resources necessary to abate the hazards.
- (3) Must have worked on similar types of projects that are equal to or exceed the scope of the project assigned with the same responsibilities.
- (4) Shall, as a minimum, have attended an OSHA training qualification class including at least 10 hours of classroom instruction.

b. Qualifications of Qualified Person, Confined Space Entry. The qualified person shall be capable (by education and specialized training) of anticipating, recognizing, and evaluating employee exposure to hazardous substances or other unsafe conditions in a confined space. This person shall be capable of specifying necessary control and protective action to ensure worker safety.

c. Qualification of Crane Operators. Crane operators shall meet the requirements in COE EM-385-1-1, Appendix G.

1.4.2 Meetings

1.4.2.1 Pework Conference

The safety officer shall attend the prework conference.

1.4.2.2 Weekly Safety Meetings

Hold weekly at the project site. Attach minutes showing contract title, signatures of attendees and a list of topics discussed to the QC Contractor Quality Control daily report.

1.4.2.3 Work Phase Meetings

The appropriate AHA shall be reviewed and attendance documented by the Contractor at the preparatory, initial, and follow-up phases of quality control inspection.

1st BRIGADE BARRACKS FORT DRUM, NEW YORK

1.4.2.4 New Employee Indoctrination

New employees will be informed of specific site hazards before they begin work. Documentation of this orientation shall be kept on file at the project site.

1.4.3 Certifications

1.4.3.1 Accident Prevention Plan (APP)

Submit the APP at least 15 calendar days prior to start of work at the job site, following Appendix A of COE EM-385-1-1. Make the APP site specific. Notice of approval to start work will be given after Government finds the APP acceptable.

1.4.3.2 Activity Hazard Analysis (AHA)

The AHA Shall be submitted and accepted as part of the APP at least 15 calendar days prior to the start of each phase. Format subsequent AHA as amendments to the APP. In accordance with contract quality control requirements each AHA will be reviewed during an on-site preparatory inspection.

1.4.4 Reports

1.4.4.1 Crane Reports

Submit crane inspection reports required in accordance with COE EM-385-1-1 and as specified herein with Daily Reports of Inspections.

1.4.4.2 Crane Critical Lift Plan

Submit crane critical lift plan COE EM-385-1-1 section 16 when crane loads meet or exceed 75 percent of the crane load capacity in any configuration.

1.4.4.3 Certificate of Compliance

The Contractor shall provide a Certificate of Compliance for each crane under this contract (see ROICC for a blank certificate). Certificate shall state that the crane and rigging gear meet applicable OSHA regulations (with the contractor citing which OSHA regulations are applicable, e.g., cranes used in construction, demolition, or maintenance shall comply with 29 CFR 1926. Certify on the Certificate of Compliance that the crane operator(s) is qualified and trained in the operation of the crane to be used. The Contractor shall also certify that all of its crane operators working on the base have been trained not to bypass safety device (e.g., anti-two block devices) during lifting operations. These certifications shall be posted on the crane.

1.5 ACCIDENT PREVENTION PLAN (APP)

Prepare the APP in accordance with the required and advisory provisions of COE EM-385-1-1 including Appendix A, "Minimum Basic Outline for Preparation of Accident Prevention Plan," and as modified herein. Include the associated AHA and other specific plans, programs and procedures listed on Pages A-3 and A-4 of COE EM-385-1-1, some of which are listed below.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

1.5.1 Contents of the Accident Prevention Plan

- a. Name and safety related qualifications of safety officer (including training and any certifications).
- b. Qualifications of competent and of qualified persons.
- c. Identity of the individual who will complete exposure data (hours worked); accident investigations, reports and logs; and immediate notification of accidents to include subcontractors.
- d. Emergency response plan. Conform to COE EM-385-1-1, paragraph 01.E and include a map denoting the route to the nearest emergency care facility with emergency phone numbers. Contractor may be required to demonstrate emergency response.
- e. Confined Space Entry Plan. Identify the qualified person's name and qualifications, training, and experience. Delineate the qualified person's authority to direct work stoppage in the event of hazardous conditions. Include procedure for rescue by contractor personnel and the coordination with emergency responders. (If there is no confined space work, include a statement that no confined space work exists and none will be created.)
- f. Hazardous Energy Control Plan. For hazardous energy sources, comply with COE EM-385-1-1, paragraph 12.A.07.
- g. Alcohol and Drug Abuse Plan
 - (1) Describe plan for random checks and testing with pre-employment screening in accordance with the DFAR Clause subpart 252.223-7004, "Drug Free Work Force."
 - (2) Description of the on-site prevention program
- h. Fall Protection and Prevention (FP&P) Plan. The plan shall be site specific and address all fall hazards in the work place. It shall address how to protect and prevent workers from falling to lower levels when they are exposed to fall hazards above 1.8 m. A qualified person shall prepare the plan. The plan shall include fall protection and prevention systems, equipment and methods employed, responsibilities, rescue and escape equipment and operations, training requirements, and monitoring methods. FP&P Plan shall be revised for lengthy projects, to reflect any new changes during the course of construction, due to changes of personnel, equipment, systems or work habits.
- i. Silica Exposure Reduction. The plan shall include specific procedures to prevent employee silica inhalation exposures.
- j. Excavation Plan. The safety and health aspects prepared in accordance with Section 02316, "Excavation, Backfilling, and Compacting for Utilities".
- k. Training Records and Requirements. List of mandatory training and certifications which are applicable to this project (e.g. explosive actuated tools, confined space entry, fall protection, crane operation, vehicle operator, forklift operators, personal protective equipment); list of requirements for periodic retraining/certification; outline requirements for supervisory and employee safety meetings.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- l. Severe Weather Plan. Procedures of ceasing on-site operations during lightning or upon reaching maximum allowed wind velocities.
- m. Emergency Lighting and Power Systems Plan (e.g. periodic testing of batteries for emergency lighting.)

1.5.2 Hazardous Material Use

Each hazardous material must receive approval prior to bringing onto the job site or prior to any other use in connection with this contract. Allow a minimum of 10 working days for processing of the request for use of a hazardous material. Any work or storage involving hazardous chemicals or materials must be done in a manner that will not expose government employees to any unsafe or unhealthful conditions. Adequate protective measures must be taken to prevent government employees from being exposed to any hazardous condition that could result from the work or storage. Approval by the Contracting Officer of protective measures and storage area is required prior to the start of the work.

1.6 ACTIVITY HAZARD ANALYSIS (AHA)

Prepare for each phase of the work. As a minimum, define activity being performed, sequence of work, specific hazards anticipated, control measures to eliminate or reduce each hazard to acceptable levels, training requirements for all involved, and the competent person in charge of that phase of work. For work with fall hazards, including fall hazards associated with scaffold erection and removal, identify the appropriate fall arrest systems. For work with materials handling equipment, address safeguarding measures related to materials handling equipment. For work requiring excavations, include excavation safeguarding requirements. The appropriate AHA shall be reviewed and attendance documented by the Contractor at the preparatory, initial, and follow-up phases of quality control inspection.

1.7 DRUG PREVENTION PROGRAM

Conduct a proactive drug and alcohol use prevention program for all workers, prime and subcontractor, on the site. Ensure that no employees either use illegal drugs or consume alcohol during work hours. Ensure there are no employees under the influence of drugs or alcohol during work hours. After accidents, collect blood, urine or saliva specimens and test injured employee's influence. A copy of the test shall be made available to the Contracting Officer upon request.

1.8 FALL HAZARD PROTECTION AND PREVENTION PROGRAM

1.8.1 Scaffolds

Delineate the fall protection requirements necessary during the erection and dismantling operation of scaffolds used on the project in the Fall Protection and Prevention (FP&P) plan and activity hazard analysis for the phase of work.

1.8.2 Training

Institute a fall protection training program. As part of the Fall Hazard Protection and Prevention Program, Contractor shall provide training for each employee who might be exposed to fall hazards.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

1.9 DUTIES OF THE SAFETY OFFICER

- a. Ensure construction hazards are identified and corrected.
- b. Maintain applicable safety reference material on the job site.
- c. Maintain a log of safety inspections performed.
- d. Attend the pre-construction conference as required.
- e. Identify hazardous work conditions and take corrective action. Failure to do so will result in a dismissal from the site, with a work stoppage pending approval of suitable replacement personnel.

1.10 DISPLAY OF SAFETY INFORMATION

Display the following information in clear view of the on-site construction personnel:

- a. Map denoting the route to the nearest emergency care facility with emergency phone numbers.
- b. AHA
- c. Confined space entry permit.
- d. A sign indicating the number of hours worked since last lost workday accident.

1.11 SITE SAFETY REFERENCE MATERIALS

Maintain safety-related references applicable to the project, including those listed in the article "References." Maintain applicable equipment manufacturers' manuals.

1.12 EMERGENCY MEDICAL TREATMENT

Contractors will arrange for their own emergency medical treatment. Government has no responsibility to provide emergency medical treatment. However, if emergency medical care is rendered by Army medical services, charges may be billed to Contractor at prevailing rates established in BUMED Instruction 6320.4 series. Reimbursement shall be made by Contractor upon receipt of monthly statement.

1.13 REPORTS

1.13.1 Accident Reports

- a. For recordable occupational injuries and illnesses, the Prime Contractor shall conduct an accident investigation to establish the root cause(s) of the accident, complete the Army Contractor Significant Incident Report (CSIR) form and provide to the Contracting Officer within 5 calendar days of the accident. The Contracting Officer will provide a copy of the CSIR form.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- b. For a weight handling equipment accident the Prime Contractor shall conduct an accident investigation to establish the root cause(s) of the accident, complete the WHE Accident Report form and provide to the Contracting Officer within 30 calendar days of the accident. The Contracting Officer will provide a blank copy of the WHE accident report form.

1.13.2 Notification

Notify the Contracting Officer as soon as practical, but not later than four hours, of any accident meeting the definition of Recordable Occupational Injuries or Illnesses or Significant Accidents. Information shall include contractor name; contract title; type of contract; name of activity, installation or location where accident occurred; date and time of accident; names of personnel injured; extent of property damage, if any; and brief description of accident (to include type of construction equipment used, PPE used, etc.).

1.13.3 Monthly Exposure Report

Monthly exposure reporting, to the Contracting Officer is required to be attached to the monthly billing request. This report is a compilation of employee-hours worked each month for all site workers, both prime and subcontractor.

1.13.4 OSHA Citations and Violations

Provide the Contracting Officer with a copy of each OSHA citation, OSHA report and contractor response. Correct violations and citations promptly and provide written corrective actions to the Contracting Officer.

1.13.5 Crane Notification

Notify Contracting Officer at least 15 days prior to bringing any crane equipment on-site so that the contracting officer may arrange for any additional quality assurance spot checks necessary by the government.

1.14 HOT WORK

Prior to performing "Hot Work" (welding, etc.) or operating other flame-producing devices, the Contractor shall request a written permit from the Fire Division. **CONTRACTORS ARE REQUIRED TO MEET ALL CRITERIA BEFORE A PERMIT IS ISSUED.** The Contractor will provide at least two (2) twenty (20) pound extinguishers for normal "Hot Work". All extinguishers shall be current inspection tagged, approved safety pin and tamper resistant seal. It is also mandatory to have a designated FIRE WATCH for any "Hot Work" done at this activity.

- a. Oil painting materials (paint, brushes, empty paint cans, etc.), and all flammable liquids shall be removed from the building at quitting time. All painting materials and flammable liquids shall be stored outside in a suitable metal locker or box and will require re-submittal with non-hazardous materials.
- b. Accumulation of trays, paper, shavings, sawdust, boxes and other packing materials shall be removed from the building at the close of each workday and such material disposed of in the proper containers located away from the building.
- c. The storage of combustible supplies shall be a safe distance from structures.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- d. Area outside of building undergoing work shall be cleaned of trash, paper, or other discarded combustibles at the close of each workday.
- e. All portable electric devices (saws, sanders, compressors, extension chord, lights, etc.) shall be disconnected at the close of each workday. When possible, the main electric switch in the building shall be deactivated.
- f. When starting work in building or areas, Contractors shall require their personnel to familiarize themselves with the location of the nearest fire alarm boxes and place in memory the emergency Fire Division phone number. ANY FIRE, NO MATTER HOW SMALL, SHALL BE REPORTED TO THE ROICC/BASE FIRE DIVISION IMMEDIATELY.

PART 2 PRODUCTS

2.1 CONFINED SPACE SIGNAGE

Provide permanent signs integral to or securely attached to access covers for new permit required confined spaces. Signs wording: "DANGER--PERMIT REQUIRED CONFINED SPACE - DO NOT ENTER -" on bold letters a minimum of 25 mm in height and constructed to be clearly legible with all paint removed. The signal word "DANGER" shall be red and readable from 1.52 m.

PART 3 EXECUTION

3.1 CONSTRUCTION

Comply with COE EM-385-1-1, NFPA 241, the accident prevention plan, the activity hazard analysis and other related submittals and activity fire and safety regulations.

3.1.1 Hazardous Material Exclusions

Notwithstanding any other hazardous material used in this contract, radioactive materials or instruments capable of producing ionizing/non-ionizing radiation as well as materials which contain asbestos, mercury or polychlorinated biphenyls, di-isocyanates, lead-based paint are prohibited. Exceptions to the use of any of the above excluded materials may be considered by Contracting Officer upon written request by Contractor.

3.1.2 Unforeseen Hazardous Material

The design should have identified materials such as PCB, lead paint, and friable and nonfriable asbestos. If material, not indicated, that may be hazardous to human health upon disturbance during construction operations is encountered, stop that portion of work and notify the Contracting Officer immediately. Within 14 calendar days the Government will determine if the material is hazardous. If material is not hazardous or poses no danger, the Government will direct the Contractor to proceed without change. If material is hazardous and handling of the material is necessary to accomplish the work, the Government will issue a modification pursuant to "FAR 52.243-4, Changes" and "FAR 52.236-2, Differing Site Conditions."

1st BRIGADE BARRACKS FORT DRUM, NEW YORK

3.2 PRE-OUTAGE COORDINATION MEETING

Contractors are required to apply for utility outages a minimum of 15 days in advance. As a minimum, the request should include the location of the outage, utilities being affected, duration of outage and any necessary sketches. Special requirements for electrical outage requests are contained elsewhere in this specification section. Once approved and prior to beginning work on the utility system requiring shut down, the Contractor shall attend a pre-outage coordination meeting with the ROICC and the Station Utilities Department to review the scope of work and the lock out/tag out procedures for worker protection. No work will be performed on energized electrical equipment unless proven impassable. Working equipment "hot" must be considered the last option.

3.3 PERSONNEL PROTECTION

3.3.1 Hazardous Noise

Provide hazardous noise signs, and hearing protection, wherever equipment and work procedures produce sound-pressure levels greater than 85 dBA steady state or 140 dBA impulse, regardless of the duration of the exposure.

3.3.2 Fall Protection

Enforce use of the fall protection device designated for each specific work activity in the FP&P plan and/or AHA all times when an employee is on a surface 1.8 m or more above lower levels. Personal fall arrest systems are required when working from an articulating or extendible boom, scissor lifts, swing stages, or suspended platform. Fall protection must comply with ANSI A10.14.

3.3.2.1 Personal Fall Arrest Device

Personal fall arrest device equipment, systems, subsystems, and components shall meet ANSI Z359.1, "Safety Requirements for Personal Fall Arrest Systems". Only a full-body harness with a shock absorbing lanyard or self-retracting lanyard is an acceptable personal fall arrest device. Body belts may only be used as a positioning device system such as steel reinforcing assembly and in conjunction with another fall arrest system. Harnesses shall have a fall arrest attachment, which is a connector, affixed to the body support (usually a D-ring) and specifically designated for attachment to the rest of the system. Only double locking snap hooks and carabiners shall be used. Webbing, straps, and ropes shall be made of synthetic fiber.

3.3.2.2 Fall Protection for Roofing Work

Fall protection controls shall be implemented based on the type of roof being constructed and work being performed. The roof area to be accessed shall be evaluated for its structural integrity including weight-bearing capabilities for the projected loading.

a. Low Sloped Roofs:

- (1) For work within 1.8 m of an edge, on low-slope roofs, personnel shall be protected from falling by use of personal fall arrest systems, guardrails, or safety nets. Safety monitoring system is not adequate fall protection and is not authorized.

1st BRIGADE BARRACKS FORT DRUM, NEW YORK

- (2) For work greater than 1.8 m from an edge, warning lines shall be erected and installed in accordance with 29 CFR 1926.502(f).

- b. Steep Roofs: Work on steep roofs requires personal fall arrest system, guardrails with toe-boards, or safety nets. This requirement also includes residential or housing type construction.

3.3.2.3 Safety Nets

If safety nets are used as the selected fall protection system on the project, they shall be provided at unguarded workplaces, over water, machinery, dangerous operations and leading edge work.

3.3.2.4 Existing Anchorage

Existing anchorages, used for attachment of personal fall arrest equipment, if to be used by the Contractor, shall be re-certified by the contractor's fall protection engineer (QP).

3.4 SCAFFOLDING

Employees shall be provided with a safe means of access to the work area on the scaffold. Climbing of any scaffold braces or supports not specifically designed for access is prohibited. Stair towers or ladders built into scaffold systems in accordance with USACE EM 385-1-1 Appendix J are required for work platforms greater than 6 m in height. Contractor shall ensure that employees that are qualified perform scaffold erection. Do not use scaffold without the capability of supporting at least four times the maximum intended load or without appropriate fall protection as delineated in the accepted fall protection plan. Minimum platform size shall be based on the platform not being greater in height than three times the dimension of the smallest width dimension for rolling scaffold. Some Baker type scaffolding has been found not to meet these requirements. Stationary scaffolds must be attached to structural building components to safeguard against tipping forward or backward. Special care shall be given to ensure scaffold systems are not overloaded. Outrigger brackets used to extend scaffold platforms on self supported scaffold systems for the storage of material is prohibited. The first tie-in shall be at the height equal to 4 times the width of the smallest dimension of the scaffold base.

3.5 EQUIPMENT

3.5.1 Material Handling Equipment

- a. Material handling equipment such as forklifts shall not be modified with work platform attachments for supporting employees unless specifically delineated in the manufacturer's printed operating instructions.
- b. The use of hooks on equipment for lifting of material must be in accordance with manufacturers printed instructions.

3.5.2 Weight Handling Equipment

- a. Cranes must be equipped with:
 - (1) Load Indicating Devices (LIDs) and a Boom Angle or Radius Indicator,
 - (2) or Load-Moment Indicating Devices (LMIs).

1st BRIGADE BARRACKS
FORT DRUM, NEW YORK

- (3) Anti-two-block prevention devices.
- (4) Boom Hoist Hydraulic Relief Valve, Disconnect, or Shutoff (stops hoist when boom reaches a predetermined high angle).
- (5) Boom Length Indicator (for telescoping booms).
- (6) Device to prevent uncontrolled lowering of a telescoping hydraulic boom.
- (7) Device to prevent uncontrolled retraction of a telescoping hydraulic boom.
- b. The Contractor shall notify the Contracting Officer, in advance, of any cranes entering the activity so that necessary quality assurance spot checks can be coordinated.
- c. The Contractor shall comply with the crane manufacturer's specifications and limitations for erection and operation of cranes and hoists used in support of the work. Erection shall be performed under the supervision of a designated person (as defined in ASME B30.5). All testing shall be performed in accordance with the manufacturers recommended procedures.
- d. The Contractor shall comply with ASME B30.5 for mobile cranes, and ASME B30.22 for articulating boom cranes.
- e. The presence of the government safety and health inspectors does not relieve the Contractor of an obligation to comply with all applicable safety regulations. The Government will investigate all complaints of unsafe or unhealthful working conditions received in writing from contractor employees, federal civilian employees, or military personnel.
- f. Each load shall be rigged/attached independently to the hook/master-link in such a fashion that the load cannot slide or otherwise become detached. Christmas-tree lifting (multiple rigged materials) is not allowed.
- g. When operating in the vicinity of overhead transmission lines, operators and riggers shall be alert to this special hazard and shall follow the requirements of ASME B30.5 or ASME B30.22 as applicable.
- h. Crane supported work platforms shall only be used in extreme conditions if the Contractor proves that using any other access to the work location would provide a greater hazard to the workers. Personnel shall not be lifted with a live hoist or friction crane.
- i. A fire extinguisher having a minimum rating of 10BC and a minimum nominal capacity of 5lb of extinguishing agent shall be available at all operator stations or cabs of cranes. Portable fire extinguishers shall be inspected, maintained, and recharged as specified in NFPA 10, Standard for Portable Fire Extinguishers.
- j. All employees shall be kept clear of loads about to be lifted and of suspended loads.
- k. A weight handling equipment operator shall not leave his position at the controls while a load is suspended.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- l. A Contractor Crane Operation Checklist shall be used by the CQC representative during oversight of contractor crane operations (refer to COE EM-385-1-1 Appendix H and ROICC for copies).
- m. Only contractor crane operators who have met the requirements of 29 CFR 1910.94, 29 CFR 1910.120, 29 CFR 1926.65, 29 CFR 1926.502(f), COE EM-385-1-1, ASME B30.5, and ASME B30.22 and other local and state requirements shall be authorized to operate the crane.
- n. Cribbing shall be utilized by the Contractor when performing lifts on outriggers.
- o. The crane hook/block must be positioned directly over the load. Side loading of the crane is prohibited.
- p. A physical barricade must be positioned to prevent personnel from entering the tailswing area of the crane.
- q. A substantial and durable rating chart containing legible letters and figures shall be provided with each crane and securely mounted onto the crane cab in a location allowing easy reading by the operator while seated in the control station.
- r. Certification records which include the date of inspection, signature of the person performing the inspection along with the serial number or other identifier of the crane which was inspected. This record will always be available for review by contracting officer personnel.
- s. Written reports listing the load test procedures utilized along with any repairs or alterations performed on the crane will be available for review by the contracting officer personnel.
- t. Contractor shall certify that all of the crane operators have been trained not to bypass safety devices (e.g. anti-two block devices) during lifting operations.

3.6 EXCAVATIONS

The competent person for excavation performed as a result of contract work shall be on-site when work is being performed in excavation, and shall inspect excavations prior to entry by workers. The competent person must evaluate for all hazards, including atmospheric, that may be associated with the work, and shall have the resources necessary to correct hazards promptly. Prior to digging the appropriate digging permit must be obtained. All underground utilities in the work area must be positively identified by a utility locating service and coordinated with the Fort Drum Public Works Utility Branch. The Contractor must physically verify underground utility locations by hand digging using wood or fiberglass-handled tools when any adjacent construction work is expected to come within three feet of the underground system. If construction is parallel to an existing utility the utility shall be exposed by hand digging every 30 m (100 feet) if parallel within 1500 m of the excavation. Trench and shoring systems must be identified in the accepted safety plan and activity hazard analysis. Extreme care must be used when excavating near direct burial electric underground cables. Trenching machines with digging chain drives shall be operated only when the spotters/laborers are in plain view of the operator. Operator and spotters/laborers shall be provided training on the hazards of the digging chain drives with emphasis on the distance that needs to be maintained when the digging chain is operating. Documentation of the training shall be kept on file in the project site office or trailer.

1st BRIGADE BARRACKS FORT DRUM, NEW YORK

3.7 ELECTRICAL

3.7.1 Conduct of Electrical Work

Underground electrical spaces must be certified safe for entry before entering to conduct work. Cable intended to be cut must be positively identified and de-energized prior to performing each cut. Positive cable identification must be made prior to submitting any outage request for electrical systems. Arrangements are to be coordinated with the Contracting Officer and Fort Drum Public Works Utility Branch for identification. The Contracting Officer will not accept an outage request until the Contractor satisfactorily documents that the circuits have been clearly identified. Perform all high voltage cutting remotely. When racking in or live switching of circuit breakers, no additional person other than the switch operator will be allowed in the space during the actual operation. Plan so that work near energized parts is minimized to the fullest extent possible. Use of electrical outages clear of any energized electrical sources is the preferred method. When working in energized substations, only qualified electrical workers shall be permitted to enter. When work requires Contractor to work near energized circuits as defined by the NFPA 70, high voltage personnel must use personal protective equipment that includes, as a minimum, electrical hard hat, safety shoes, insulating gloves with leather protective sleeves, fire retarding shirts, coveralls, face shields, and safety glasses. Insulating blankets, hearing protection, and switching suits may be required, depending on the specific job and as delineated in the Contractor AHA.

3.7.2 Portable Extension Cords

Portable extension cords shall be sized in accordance with manufacturer ratings for the tool to be powered.

3.8 WORK IN CONFINED SPACES

Comply with the requirements in Section 06.I of COE EM-385-1-1. Any potential for a hazard in the confined space requires a permit system to be used.

- a. Entry Procedures. Prohibit entry into a confined space by personnel for any purpose, including hot work, until the qualified person has conducted appropriate tests to ensure the confined or enclosed space is safe for the work intended and that all potential hazards are controlled or eliminated and documented. (See Section 06.I.05 of COE EM-385-1-1 for entry procedures.) All hazards pertaining to the space shall be reviewed with each employee during review of the AHA.
- b. Forced air ventilation is required for all confined space entry operations and the minimum air exchange requirements must be maintained.
- c. Ensure the use of rescue and retrieval devices in confined spaces greater than 1.5 m in depth. Conform to Sections 06.I.09, 06.I.10 and 06.I.11 of COE EM-385-1-1.
- d. Sewer wet wells require continuous atmosphere monitoring with audible alarm for toxic gas detection.
- e. Include training information for employees who will be involved as entrant attendants for the work. Conform to Section 06.I.06 of COE EM-385-1-1.

**1st BRIGADE BARRACKS
FORT DRUM, NEW YORK**

- f. Entry Permit. Use ENGFORM 5044-R or other form with the same minimum information for the Daily Confined Space Entry Permit, completed by the qualified person. Post the permit in a conspicuous place close to the confined space entrance.

3.9 CRYSTALLINE SILICA

Grinding, abrasive blasting, and foundry operations of construction materials containing crystalline silica, shall comply with OSHA regulations, such as 29 CFR 1910.94, and COE EM-385-1-1, (Appendix C). The Contractor shall develop and implement effective exposure control and elimination procedures to include dust control systems, engineering controls, and establishment of work area boundaries, as well as medical surveillance, training, air monitoring, and personal protective equipment.

3.10 HOUSEKEEPING

3.10.1 Clean-up

All debris in work areas shall be cleaned up daily or more frequently as necessary. Construction debris may be temporarily located in an approved location, however garbage accumulation must be removed each day.

3.10.2 Dust Control

In addition to the dust control measures required elsewhere in the contract documents dry cutting of brick or masonry shall be prohibited. Wet cutting must address control of water run off.

3.11 ACCIDENT SCENE PRESERVATION

For serious accidents, and accidents involving weight handling equipment, ensure the accident site is secured and evidence is protected remaining undisturbed until released by the Contracting Officer.

3.12 FIELD QUALITY CONTROL

3.12.1 Inspections

Include safety inspection as a part of the daily Quality Control inspections required in Section 01451, "Contractor Quality Control".

3.13 FLAMMABLE AND COMBUSTIBLE LIQUID HANDLING AND STORAGE

3.13.1 Safety Gas Containers

Handling of flammable and combustible liquids shall be in safety containers with flame arresters, with not more than 19 L capacity, having a spring-closing lid and spout cover and designed to safely relieve internal pressures under fire exposures. Flammable and combustible Liquids shall be stored in separate NFPA approved storage cabinets 15 m away from any sources of ignition with suitable NO SMOKING OR OPEN FLAME signs posted in all such areas.

-- End Of Section --

ATTACHMENTS

Attachment #1	Exterior & Interior Color Matrices
Attachment #2	Water Flow Test Data
Attachment #3	Subsurface Investigation Data (Boring Logs)
Attachment #4	Exterior Photographs
Attachment #5	Drawing Index
Attachment #6	Sustainable Design - SPiRiT Rating

ATTACHMENT #1
EXTERIOR & INTERIOR COLOR MATRICES

CHART # 1 - ARCHITECTURAL THEME for MOUNTAIN VIEW and AIRFIELD AREA FACILITIES of FORT DRUM, N.Y.

FUNCTION TYPE	OPERATIONS (Barracks, Headquarters & Dining) AND MEDICAL FACILITIES	INDUSTRIAL BUILDINGS	(See Gen Note No. 4 Below) COMMUNITY FACILITIES (Sloped roof)	(See Gen Note No. 5 Below) COMMUNITY FACILITIES (Sloped roof)	COMMUNITY FACILITIES (Flat roof)	AIRFIELD BUILDINGS Maintenance Facilities	See revision # 6 below AIRFIELD BUILDINGS Barracks & HQ facilities
MATERIALS	COLOR/FINISH	COLOR/FINISH	COLOR/FINISH	COLOR/FINISH	COLOR/FINISH	COLOR/FINISH	COLOR/FINISH
METAL ROOF Standing Seam Only	Glidden Paint Color No. 79-10—Grey Old Glidden no./name changed to '30YY 22/059 "Grey Tweed" see revision # 2 below	Glidden Paint Color No. 79-10—Grey Old Glidden no./name changed to '30YY 22/059 "Grey Tweed" see revision # 2 below	Glidden Paint Color No. 79-10—Grey Old Glidden no./name changed to '30YY 22/059 "Grey Tweed" see revision # 2 below Also see note (c) below	PPG DURANAR Blue-Grey No. 5MA94902	NOT APPLICABLE	PPG-Musket-Gray-No. 665255-- Metal roof & fascia/Trim Use Glidden 30YY 16/032 "Grey Hearth" in lieu of PPG color indicated see revision # 5 below For accent strip use: "Coloraid" Red Orange	Glidden Paint Color No. 79-10—Grey Old Glidden no./name changed to '30YY 22/059 "Grey Tweed" see revision # 2 below
STANDARD BRICK	Glen-Gery "Old Bridge" No. C-107 or approved equal see note (6) below	NOT APPLICABLE	Glen-Gery "Old Bridge" No. C-107 or approved equal see note (6) below	Glen-Gery "Old Bridge" No. C-107 or approved equal see note (6) below	NOT APPLICABLE	NOT APPLICABLE	Glen-Gery "Old Bridge" No. C-107 or approved equal see note (6) below
ACCENT BRICK	NOT APPLICABLE	NOT APPLICABLE	Glen-Gery Fall Gray "wire-cut" (At designers discretion)	Glen-Gery Fall Gray "wire-cut" (At designers discretion)	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE
METAL SIDING	NOT APPLICABLE	Benjamin Moore Color-No. EF-28 Old no. changed to 1222	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	Benjamin Moore Color-No. EF-28 Old no. changed to 1222	NOT APPLICABLE
LOUVERS & EXTERIOR CAULKING	Colors to match surrounding building materials	Colors to match surrounding building materials	Colors to match surrounding building materials	Colors to match surrounding building materials	Colors to match surrounding building materials	Colors to match surrounding building materials	Colors to match surrounding building materials
WINDOW FRAMES	Glidden Paint Color No. 79-31 Light Grey Old Glidden no./name changed to 40YY 48/048 "Grey Expectations" see revision # 4 below	Glidden Paint Color No. 79-31 Light Grey Old Glidden no./name changed to 40YY 48/048 "Grey Expectations" see revision # 4 below	Glidden Paint Color No. 79-31 Light Grey Old Glidden no./name changed to 40YY 48/048 "Grey Expectations" see revision # 4 below Also see note (c) below	PPG DURANAR Blue-Grey No. 5MA94902 or Dark Brown or Bronze Also see note (d) below	Glidden Paint Color No. 79-31 Light Grey Old Glidden no./name changed to 40YY 48/048 "Grey Expectations" see revision # 4 below	Pratt & Lambert Sequoia Color No. RO202A	Glidden Paint Color No. 79-31 Light Grey Old Glidden no./name changed to 40YY 48/048 "Grey Expectations" see revision # 4 below
GLAZING	Clear	PPG Bronze tinted	PPG SOLEX Blue-Green Tint or Clear Also see note (e) below	PPG SOLEX Blue-Green Tint or Clear Also see note (e) below	PPG SOLEX Blue-Green Tint	Clear	Clear
MANDOORS AND FRAMES	Glidden Paint Color # 79-11 Dark Gray (Rev-3) or # 79-31 Light Gray (Rev-4) Old Glidden nos./names changed to 30YY 16/032 "Grey Hearth" and or to 40YY 48/048 "Grey Expectations" see revision # 3 & 4 below Also see note (a) below	Glidden Paint Color No. 79-11 Dark Grey Old Glidden no./name changed to 30YY 16/032 "Grey Hearth" see revision # 3 below	Glidden Paint Color No. 79-31 Light Grey Old Glidden no./name changed to 40YY 48/048 "Grey Expectations" see revision # 4 below Also see note (c) below	PPG DURANAR Blue-Grey No. 5MA94902 or Dark Brown or Bronze Also see note (d) below	Glidden Paint Color No. 79-31 Light Grey Old Glidden no./name changed to 40YY 48/048 "Grey Expectations" see revision # 4 below	Pratt & Lambert Sequoia Color No. RO202A	Glidden Paint Color # 79-11 Dark Gray (Rev-3) or # 79-31 Light Gray (Rev-4) Old Glidden nos./names changed to 30YY 16/032 "Grey Hearth" and or to 40YY 48/048 "Grey Expectations" see revision # 3 & 4 below Also see note (a) below

CHART # 1 - ARCHITECTURAL THEME for MOUNTAIN VIEW and AIRFIELD AREA FACILITIES of FORT DRUM, N.Y.

FUNCTION TYPE	OPERATIONS (Barracks, Headquarters & Dining) AND MEDICAL FACILITIES	INDUSTRIAL BUILDINGS	(See Gen Note No. 4 Below) COMMUNITY FACILITIES (Sloped roof)	(See Gen Note No. 5 Below) COMMUNITY FACILITIES (Sloped roof)	COMMUNITY FACILITIES (Flat roof)	AIRFIELD BUILDINGS Maintenance Facilities	See revision # 6 below AIRFIELD BUILDINGS Barracks & HQ facilities
MATERIALS	COLOR/FINISH	COLOR/FINISH	COLOR/FINISH	COLOR/FINISH	COLOR/FINISH	COLOR/FINISH	COLOR/FINISH
ALUMINUM STOREFRONT	Glidden Paint Color # 79-11 Dark Gray (Rev 3) or # 79-31 Light Gray (Rev 4) Old Glidden nos./names changed to 30YY 16/032 "Grey Hearth" and or to 40YY 48/048 "Grey Expectations" see revision # 3 & 4 below Also see note (a) below	Glidden Paint Color No. 79-11 Dark Grey Old Glidden no./name changed to 30YY 16/032 "Grey Hearth" see revision # 3 below	Glidden Paint Color No. 79-31 Light Grey Old Glidden no./name changed to 40YY 48/048 "Grey Expectations" see revision # 4 below Also see note (c) below	PPG DURANAR Blue-Grey No. 5MA94902 or Dark Brown or Bronze Also see note (d) below	Glidden Paint Color No. 79-31 Light Grey Old Glidden no./name changed to 40YY 48/048 "Grey Expectations" see revision # 4 below	Pratt & Lambert Sequoia Color No. RO202A	Glidden Paint Color # 79-11 Dark Gray (Rev 3) or # 79-31 Light Gray (Rev 4) Old Glidden nos./names changed to 30YY 16/032 "Grey Hearth" and or to 40YY 48/048 "Grey Expectations" see revision # 3 & 4 below Also see note (a) below
OVERHEAD DOORS AND FRAMES	Glidden Paint Color # 79-11 Dark Gray (Rev 3) or # 79-31 Light Gray (Rev 4) Old Glidden nos./names changed to 30YY 16/032 "Grey Hearth" and or to 40YY 48/048 "Grey Expectations" see revision # 3 & 4 below Also see note (a) below	Pratt & Lambert Sequoia Color No. RO202A	Glidden Paint No. 79-31 Light Grey Old Glidden no./name changed to 40YY 48/048 "Grey Expectations" see revision # 4 below Also see note (c) below	PPG DURANAR Blue-Grey No. 5MA94902 or Dark Brown or Bronze Also see note (d) below	Glidden Paint Color No. 79-31 Light Grey Old Glidden no./name changed to 40YY 48/048 "Grey Expectations" see revision # 4 below	Pratt & Lambert Sequoia Color No. RO202A	Glidden Paint Color # 79-11 Dark Gray (Rev 3) or # 79-31 Light Gray (Rev 4) Old Glidden nos./names changed to 30YY 16/032 "Grey Hearth" and or to 40YY 48/048 "Grey Expectations" see revision # 3 & 4 below Also see note (a) below
SPLIT FACE BLOCK	Natural Gray No. 110 Adams Concrete Products of Durham, North Carolina	Natural Gray No. 110 Adams Concrete Products of Durham, North Carolina	NOT APPLICABLE	NOT APPLICABLE	Cossit Concrete Products Color R-15 from Hamilton, NY	NOT APPLICABLE	Natural Gray No. 110 Adams Concrete Products of Durham, North Carolina
SMOOTH FACE BLOCK	NOT APPLICABLE	Natural Gray No. 110 Adams Concrete Products of Durham, North Carolina	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE
MORTAR AND CONTROL JOINTS	Warm gray color for both brick & block. MEDUSA Group No. "Brikset"	Warm gray color: MEDUSA Group No. "Brikset"	Warm gray color: MEDUSA Group No. "Brikset"	Warm gray color: MEDUSA Group No. "Brikset"	Red Color: MEDUSA Group No.48B	NOT APPLICABLE	Warm gray color for both brick & block. MEDUSA Group No. "Brikset"
PRECAST	Warm gray color produced with type I cement from Glens Falls, NY Also see note (b) below.	Warm gray color produced with type I cement from Glens Falls, NY Also see note (b) below.	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	Warm gray color produced with type I cement from Glens Falls, NY Also see note (b) below.

SEE NEXT PAGE FOR FOOTNOTES, GENERAL NOTES AND REVISIONS.

CHART # 1 - ARCHITECTURAL THEME for MOUNTAIN VIEW and AIRFIELD AREA FACILITIES of FORT DRUM, N.Y.

FUNCTION TYPE	OPERATIONS (Barracks, Headquarters & Dining) AND MEDICAL FACILITIES	INDUSTRIAL BUILDINGS	(See Gen Note No. 4 Below) COMMUNITY FACILITIES (Sloped roof)	(See Gen Note No. 5 Below) COMMUNITY FACILITIES (Sloped roof)	COMMUNITY FACILITIES (Flat roof)	AIRFIELD BUILDINGS Maintenance Facilities	See revision # 6 below AIRFIELD BUILDINGS Barracks & HQ facilities
MATERIALS	COLOR/FINISH	COLOR/FINISH	COLOR/FINISH	COLOR/FINISH	COLOR/FINISH	COLOR/FINISH	COLOR/FINISH

FOOTNOTES: (a) - For Operations Facilities use Color 79-11 & for Medical Facilities use Color 79-31.
(b) - With Lightly Sandblasted Finish.
(c) - Color selected shall match for the Windows, Mandoors and Frames, Storefronts, and Overhead Doors & Frames.
(d) - This could be either Dark Brown Paint (Fed Std Color No. 20122) or Bronze Anodized Finish.
(e) - This is optional for aesthetic or safety reasons.

GENERAL NOTES :

- (1) - ALL COLOR AND MATERIAL SELECTIONS SHALL BE APPROVED BY THE ARCHITECTURAL COMPLIANCE BOARD OF FORT DRUM. (AKA A.C.BOARD OR A.C.B.)
- (2) - COLORS AND PATTERNS INDICATED ABOVE ARE FOR IDENTIFICATION PURPOSES AND PRODUCTS OF EQUAL COLOR AND PATTERN MAY BE SELECTED WITH A.C. BOARD APPROVAL.
- (3) - ALL EXTERIOR SITE FINISHES SHALL BE IN HARMONY WITH THE OVERALL EXTERIOR BUILDING MATERIALS.
- (4) - CONSTRUCTED FACILITIES THAT FALL INTO THIS CATEGORY ARE: Youth Activity Center, Religious Ed/Child Care.
- (5) - CONSTRUCTED FACILITIES THAT FALL INTO THIS CATEGORY ARE: Shopping Center; Fire Station No. 1; Child Care; Credit Union; Car Wash.
- (6) - "TIFFANY BLEND, (RANGE B)" BRICK AS MANUFACTURED BY GENERAL CLAY PRODUCTS, INC., SHALL BE CONSIDERED AS AN EQUAL.

REVISIONS: (Rev #)

Rev 1 - The latest Benjamin Moore color No. to match the old ET-28, is now No. 1222 .	Revised 25 Apr 96
Rev 2 - The latest Glidden Paint Color No. to match the old # 79-10 "Grey" is now No. 30YY 22/059 "Grey Tweed".	Revised 24 Aug 98
Rev 3 - The latest Glidden Paint Color No. to match the old # 79-11 "Dark Grey" is now No. 30YY 16/032 "Grey Hearth"	Revised 24 Aug 98
Rev 4 - The latest Glidden Paint Color No. to match the old # 79-31 "Light Grey" is now No. 40YY 48/048 "Grey Expectations"	Revised 24 Aug 98
Rev 5 - The Metal Roof color for Airfield facilities shall match Glidden Paint No. 30YY 16/032 "Grey Hearth" in lieu of PPG Musket Gray which has been dropped.	Revised 24 Mar 99
Rev 6 - This column was added for new Barracks and Headquarters facilities to be constructed at WSAAF for the Aviation Brigade and shall match theme of the Mountain View Operations & Medical Facilities.	Revised 25 Jan 02

Revised Interior Color Selection Chart for Mountain View Area Only from IDG page III.2.2-5

Area / Material	Color Palette				Comments
	1	2	3	4	
Primary	70-29	70-51	70-33	72-73	Old Glidden Color No.
<i>Wall surface</i>	39YY 85/046 “Egret”	70YY 83/075 “Vapor”	70YY 83/075 “Vapor”	30YY 75/145 “Macadamia White”	New Glidden Color No.
Accents	80-18	78-00	79-59	79-34 or 80-10 ⁽¹⁾	Old Glidden Color No.
<i>Grilles</i>	90BG 10/067 “Black Sable”	70BB 11/223 “Deep Purple”	90BG 16/060 “Inland Waters”	30YY 57/342 ⁽²⁾ “Golden Spa”	New Glidden Color No.
<i>Radiators</i>					
Trim	Wood	70-36	70-37	72-68	Old Glidden Color No.
<i>Frames</i>		44YY 87/118 “Summer Haze”	28YY 86/106 “Icy Peach”	30YY 61/300 “Summer Straw”	New Glidden Color No.
<i>Moldings</i>					
<i>Wainscot</i>	As deemed appropriate by the Designer and as approved by the Architectural Compliance Board				
Wall Paper	As deemed appropriate by the Designer and as approved by the Architectural Compliance Board				
Carpet	Blue Gray ⁽³⁾	Blue Gray ⁽³⁾	Gray Beige ⁽³⁾	Gray Beige ⁽³⁾	Submit for approval ⁽³⁾

MOUNTAIN VIEW COLOR PALETTE ⁽⁴⁾					
PALETTE NO.	WALL	ACCENT	TRIM	FLOORING	WALL PAPER
1.	39YY 85/046 “Egret”	90BG 10/067 “Black Sable”	Wood	Blue Gray ⁽³⁾	See note above
2.	70YY 83/075 “Vapor”	70BB 11/223 “Deep Purple”	44YY 87/118 “Summer Haze”	Blue Gray ⁽³⁾	See note above
3.	70YY 83/075 “Vapor”	90BG 16/060 “Inland Waters”	28YY 86/106 “Icy Peach”	Gray Beige ⁽³⁾	See note above
4.	30YY 75/145 “Macadamia White”	30YY 57/342 ⁽²⁾ “Golden Spa”	30YY 61/300 “Summer Straw”	Gray Beige ⁽³⁾	See note above

NOTES:

- (1) This color is not an appropriate selection for this situation.
- (2) This color relates to the old Glidden # 79-34 not the # 80-10.
- (3) Submit vinyl composition tile samples for approval by the Architectural Compliance Board.
- (4) The above paint colors are based on Glidden Paint numbers.

ATTACHMENT #2
WATER FLOW TEST DATA

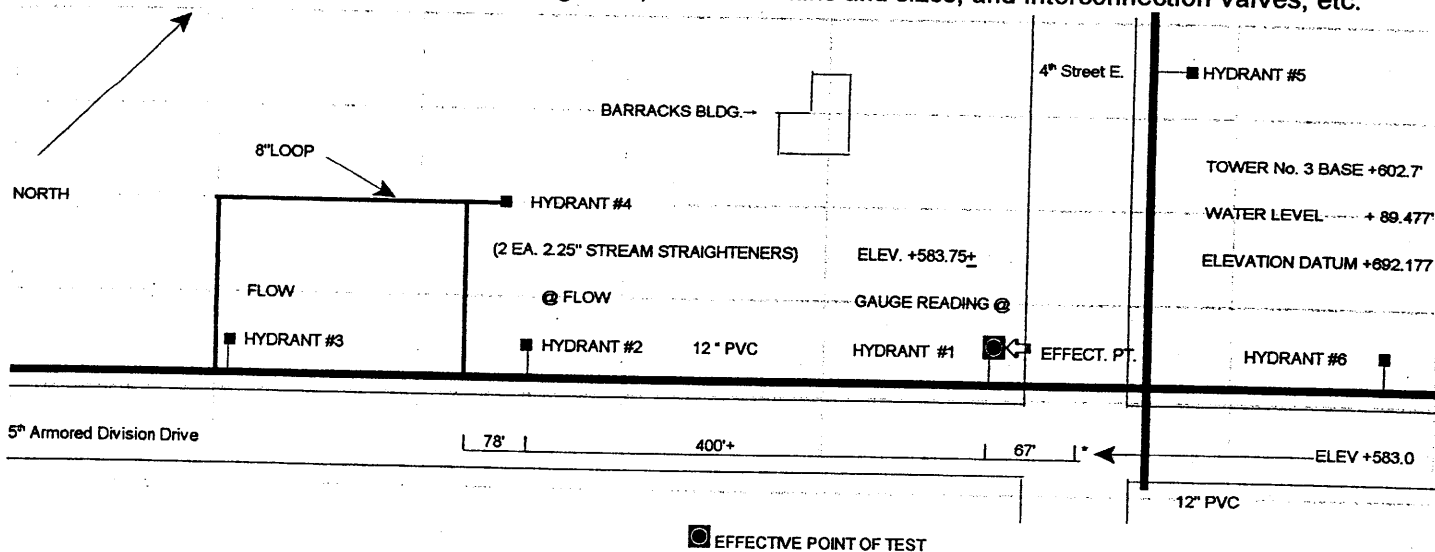
FLOW TEST INFORMATION SHEET

M. WALKER SPRINKLER CO.

118 Maywood Dr • Syracuse, NY 13205
315-469-7037

1. Reason for Test: Bid Information ☐ Design Base ☒ Other Barracks Bldg.
2. Location of Property 5th Armored Division Drive & 4th Street E. - Fort Drum, NY - Jeff.
(Address) (City) (State) (County)
3. Date & Time of Test: Date: Nov.1, 2002 Time: 09:33 (am) (pm)
4. Test Conducted by: R. Mark Walker Technician
Name Title Affiliation
5. Test Witnessed by: Chad Barnes Engineer C&S Engineers
Name Title Affiliation
6. Source of Water Supply: Gravity ☒ Pump ☐ Other:
7. Name of Water District Fort Drum Fire District Fort Drum FD
8. Is water supply provided with PRV STA's Yes ☐ No ☒
(If so, what is PRV outlet setting? _____ PSIG DANC "off" @ time of test

9. **Area Map:** (Draw Sketch showing property location; bounding streets and names, north arrow; hydrant locations and identification numbers; distances from hydrants to property; elevations of hydrants, and property floors or grades; all water mains and sizes, and interconnection valves, etc.



☒ EFFECTIVE POINT OF TEST

10. Flow Test Data

FLOW AT HYDR. NO.	STATIC AT HYDRANT NO.	STATIC PSIG	RESIDUAL PSIG	FLOW GPM	OUTLET COEFFICIENT	ADJUSTED GPM
-	1	51	45	-	-	-
2	-	-	-	784	.88	690
2	-	-	-	784	.88	690
3	-	-	-	1254	.9	1128

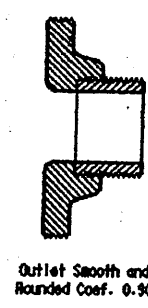
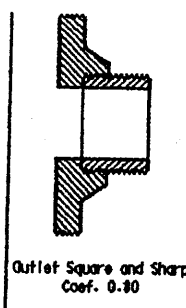
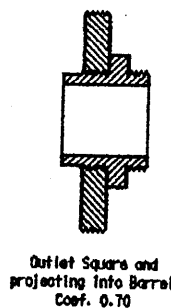
11. See reverse side for graph.

12. Signed *R. Mark Walker*

Witness: FD Fire Inspectors: Mark Farrington &

Gene Hartnett / Plbg. Shop: B. Leeder

Form no 102



WATER FLOW TEST SUMMARY SHEET

Hydrant No.	Outlet I.D. inches	Pitot Press. psi	Flow gpm	Residual psi
1				45
2	2 ea. @ 2.25"	27 psi ea.	1380	
3	2.5625"	41	1128	
Total Flow			2,508	45

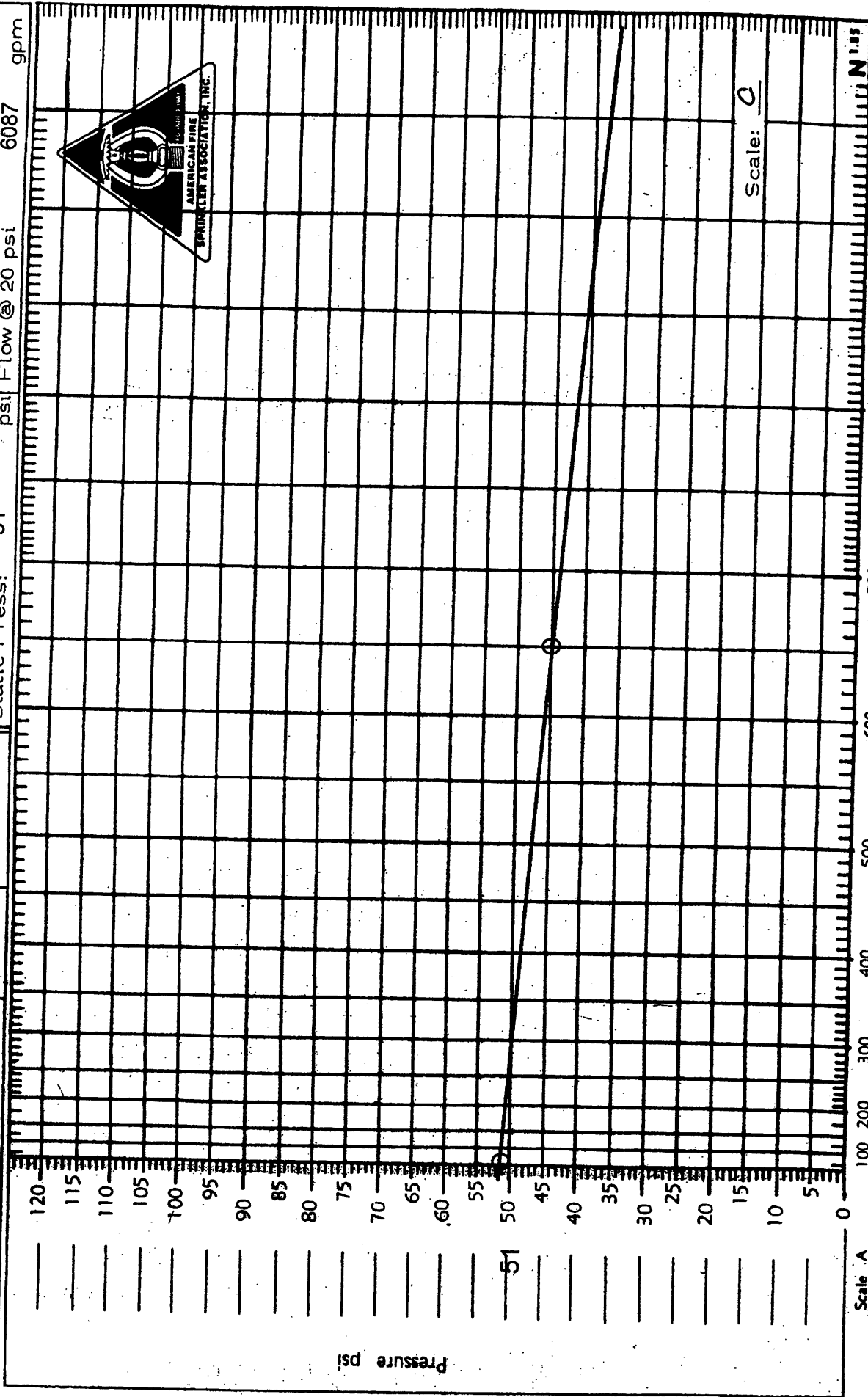
Date: Nov. 1, 2002 Time: 09:33 Cont. No.

Cont. Name: BARRACKS BLDG. - C&S ENGINEERS

Address: 5th Armored Division Drive & Fourth Street East

Fort Drum, NY

Static Press: 51 psi Flow @ 20 psi 6087 gpm



Scale A
Scale B
Scale C

Water Flow gpm

AMERICAN FIRE SPRINKLER ASSOCIATION, INC.

November
1, 2002

Table
3

07:23:59	87.66
7:28:59	88.139
7:33:59	89.578
7:38:59	89.957
7:43:59	90.941
7:48:59	91.37
7:53:59	89.603
7:58:59	89.351
8:42:37	84.833
8:47:37	86.271
8:52:37	87.205
8:57:37	87.483
9:02:37	88.316
9:07:37	88.72
9:12:37	89.401
9:17:37	90.007
9:22:37	90.461
9:27:37	91.067
9:32:37	88.366
9:37:37	89.477
9:42:37	89.225
9:47:37	89.124
9:52:37	88.997
9:57:37	88.795
10:02:37	88.669
10:07:37	88.518
10:12:37	88.316
10:17:37	87.761
10:22:37	87.735
10:27:37	87.559
10:32:37	87.432
10:37:37	87.155
10:42:37	87.104
10:47:37	86.852
10:52:37	86.751
10:57:37	86.65
11:02:37	86.448
11:07:37	86.398
11:12:37	86.019
11:17:37	86.044
11:22:37	85.792
11:27:37	85.716
11:32:37	85.489
11:37:37	85.312
11:42:37	85.211

$$\leftarrow +602.7 = 692,177.$$

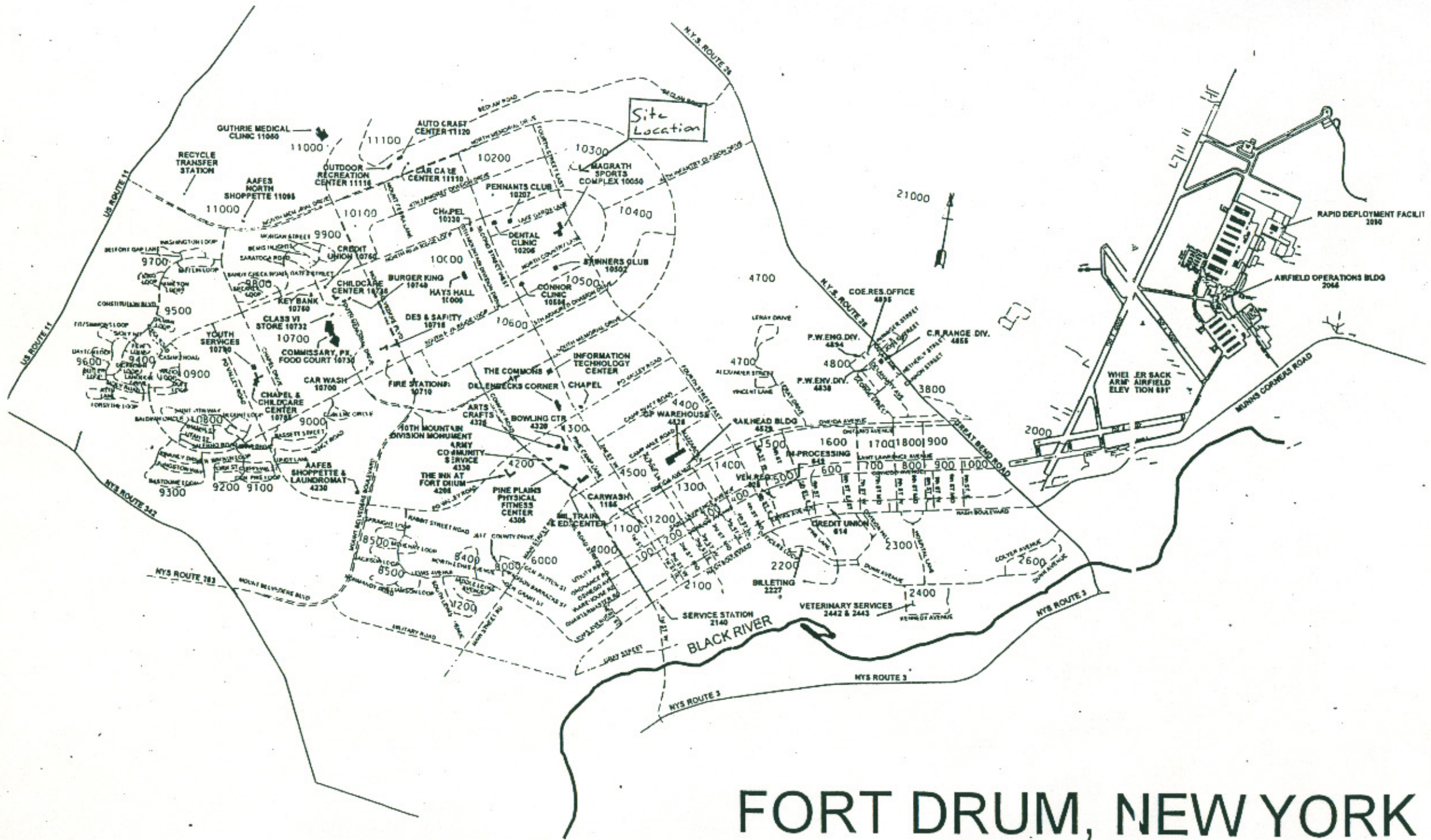
$$- 583.75$$

$$108.427 \times .434 = 47,252$$

ATTACHMENT #3
SUBSURFACE INVESTIGATION DATA
(BORING LOGS)

ATTACHMENT A

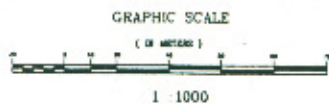
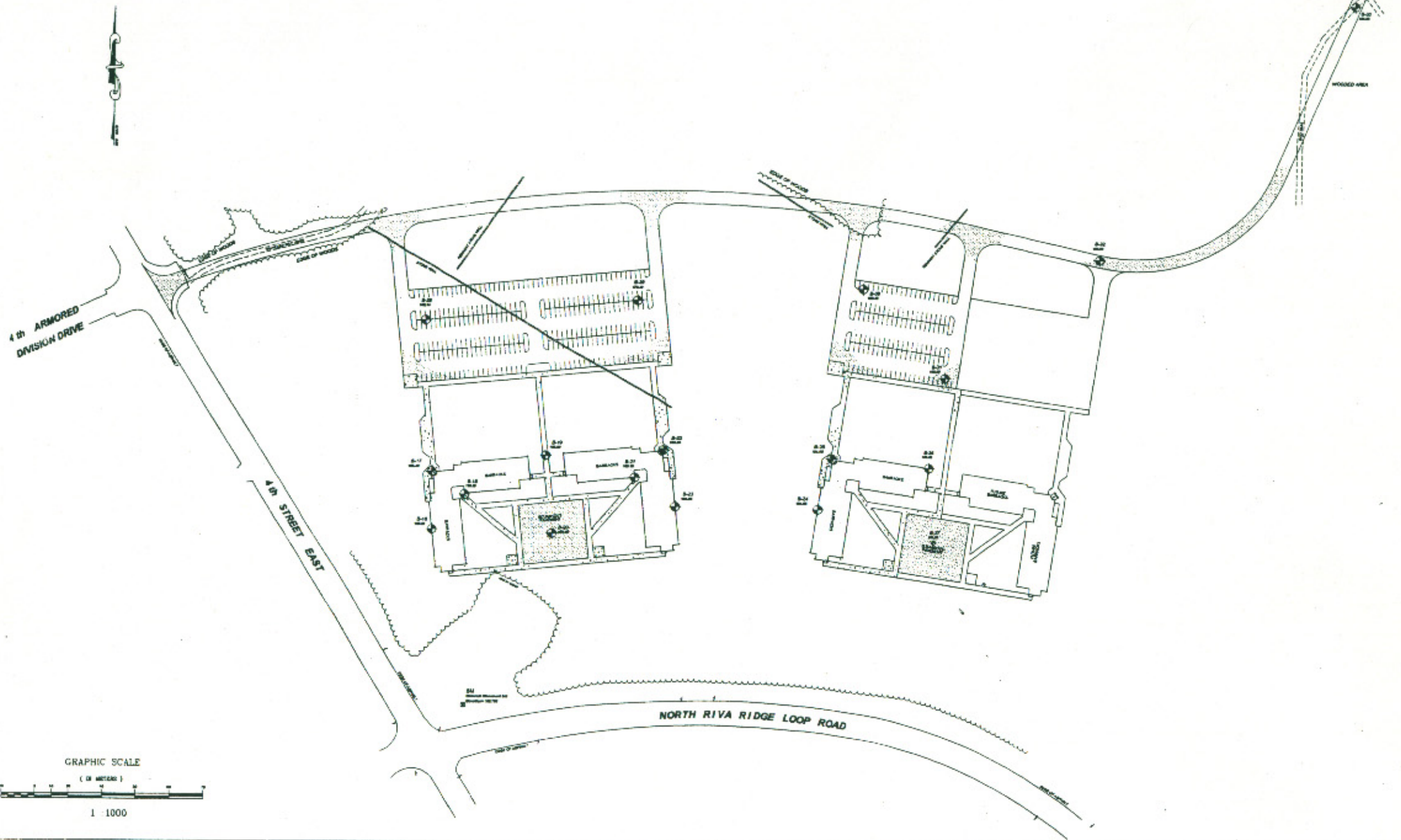
SITE LOCATION PLAN



FORT DRUM, NEW YORK

ATTACHMENT B

BORING LOCATION PLAN



Legend	
	Site Benchmark
	Sign
	Deciduous Tree
	Staff Boring Location

General Notes

1. This survey is referenced horizontally to the North American Datum of 1983 (NAD83) and vertically to the New York State Plane Coordinate System (Clarke Spheroid) and vertically to the North American Vertical Datum of 1988 (NAVD88).
2. All points shown on this plan are referenced to NAD83 and projected on the New York State Plane Coordinate System (Clarke Spheroid).
3. Reference Horizontal Control Station is a Second Order Monument, designated as "CLARKSON", located approximately 2.45 miles South of the corner of 4th Street.

Unrecorded location of station in a survey map bearing a Licensed Land Surveyor's seal is a violation of Section 7008, Subsection 3 of the New York State Education Law.

Only copies from the original of this survey made with an original of the surveyor's seal and of the instrument used and so certified to be true and valid copies.

DATE 8/1/83	PROJECT NUMBER CD2251-07-03	Boring Location Plan for the Proposed 1st Brigade Barracks Fort Drum Military Reservation	
		Town of Lefroy County of Jefferson State of New York	
		ATLANTIC TESTING LABORATORIES, Llc	
		DESIGNED BY CHECKED BY DRAWN BY FIELD BY POLAROGRAPH BY	

ATTACHMENT C

SUBSURFACE INVESTIGATION LOGS

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Client: N.K. Bhandari Consulting Engineers

Project: Subsurface Investigation

1st Brigade Barracks Expansion

Fort Drum, New York

Boring No.: B-16 Sheet 1 of 1

Casing Hammer Weight: _____ kg
Fall: _____ mm

Sampler Hammer Weight: 63.5 kg
Fall: 762 mm

Ground Elev.: 183.61 m

Boring Advance By:

10.7 cm Auger

Report No.: CD2251-7-03

Boring Location: See Boring Location Plan

Start Date: 7/18/2003 Finish Date: 7/18/2003

Groundwater Observations
Date Time Depth (m) Casing at
7/18/2003 11:08 AM Dry 1.52

Borehole caved at 0.9 meters

DEPTH (meters)	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE		SAMPLE TYPE	BLOWS ON SAMPLER PER 152 mm 51-mm O.D. SAMPLER				DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL	RECOVERY (mm)
			From	To		2	3	3	4			
1	AUGER	1	0.00	0.61	SS					0.1	13 cm TOPSOIL & ORGANIC MATERIAL	457
										0.6	Brown mf+ SAND; some mf+ GRAVEL; little SILT; trace ORGANIC MATERIAL (roots); (moist, non-plastic)	
		2	0.61	0.91	SS	8	10			0.9	Brown mf+ SAND; some mf+ GRAVEL; little SILT (moist, non-plastic)	432
		2A	0.91	1.22	SS			46	92		Grey ROCK FRAGMENTS (moist, non-plastic)	
2		3	1.22	1.37	SS					1.5	Similar Soil	127
											Boring terminated at 1.5 meters due to auger refusal, possible BEDROCK	
											Note: 1. Boring backfilled upon completion with on-site soil. 2. Possible weathered rock at 1 meter.	
3												
4												
5												
6												

SS Split Spoon Sample
NX Rock Core
SH Undisturbed Sample (Shelby Tube)
Estimated Groundwater

Drillers: Robin Pryce; Zach Remington

Inspector: _____

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Client: N.K. Bhandari Consulting Engineers
 Project: Subsurface Investigation
1st Brigade Barracks Expansion
Fort Drum, New York

Report No.: CD2251-7-03
 Boring Location: See Boring Location Plan

Boring No.: B-17 Sheet 1 of 1

Casing Hammer Weight: _____ kg
 Fall: _____ mm
 Sampler Hammer Weight: 63.5 kg
 Fall: 762 mm

Ground Elev.: 183.40 m
 Boring Advance By: 10.7 cm Auger

Start Date: 7/17/2003 Finish Date: 7/17/2003

Groundwater Observations
 Date Time Depth (m) Casing at
7/17/2003 4:00 PM Dry 1.68

Borehole caved at 1.1 meters.

DEPTH (meters)	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE		SAMPLE TYPE	BLOWS ON SAMPLER PER 152 mm 51-mm O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL	RECOVERY (mm)
			From	To					
1	AUGER	1	0.00	0.61	SS	5 5 5 10	0.2	15 cm TOPSOIL & ORGANIC MATERIAL Brown mf+ SAND; some mf GRAVEL; little SILT; trace ORGANIC MATERIAL (roots); (moist, non-plastic) Similar Soil	229
		2	0.61	0.94	SS	21 39 50/3 cm	1.0		305
		3	1.22	1.46	SS	52 100/5 cm	1.5	Grey ROCK FRAGMENTS	178
2			1.68	3.20	NX	RUN 1	3.2	Grey LIMESTONE 145 cm or 95% Recovery 9 Pieces (89cm) -39% Chips and Fragments 3 Pieces longer than 10cm (43cm) - RQD = 28%	1448
4								Boring terminated at 3.2 meters. Note: 1. Boring backfilled upon completion with on-site soil. 2. Possible weathered rock at 1 meter.	
5									
6									

SS Split Spoon Sample
 NX Rock Core
 SH Undisturbed Sample (Shelby Tube)
 Estimated Groundwater

Drillers: Robin Pryce; Zach Remington
 Inspector: _____

ATL-LOG1 METRIC CD2251.GPJ ATL-WELL.GOT 8/27/03

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Client: N.K. Bhandari Consulting Engineers
 Project: Subsurface Investigation
1st Brigade Barracks Expansion
Fort Drum, New York

Report No.: CD2251-7-03
 Boring Location: See Boring Location Plan

Boring No.: B-18 Sheet 1 of 1

Start Date: 7/17/2003 Finish Date: 7/18/2003

Casing Hammer Weight: _____ kg
 Fall: _____ mm
 Sampler Hammer Weight: 63.5 kg
 Fall: 762 mm

Date	Time	Depth (m)	Casing at
<u>7/17/2003</u>	<u>5:30 PM</u>	<u>Dry</u>	<u>1.22</u>
<u>7/18/2003</u>	<u>7:30 AM</u>	<u>Dry</u>	<u>1.22</u>

Ground Elev.: 183.40 m
 Boring Advance By: 10.7 cm Auger

Borehole caved at 0.6 meters.

DEPTH (meters)	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE		SAMPLE TYPE	BLOWS ON SAMPLER PER 152 mm 51-mm O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL	RECOVERY (mm)
			From	To					
1	AUGER	1	0.00	0.61	SS	2 17 28 39	0.2	15 cm TOPSOIL & ORGANIC MATERIAL Grey ROCK FRAGMENTS (moist, non-plastic)	381
		2	0.61	1.01	SS	37 29 50/5 cm		Similar Soil	305
2							1.2	Boring terminated at 1.2 meters due to auger refusal, possible BEDROCK Note: 1. Boring backfilled upon completion with on-site soil. 2. Possible weathered rock at 0.5 meters.	
3									
4									
5									
6									

SS Split Spoon Sample
 NX Rock Core
 SH Undisturbed Sample (Shelby Tube)
 Estimated Groundwater

Drillers: Robin Pryce; Zach Remington
 Inspector: _____

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Client: N.K. Bhandari Consulting Engineers

Project: Subsurface Investigation

1st Brigade Barracks Expansion

Fort Drum, New York

Report No.: CD2251-7-03

Boring Location: See Boring Location Plan

Boring No.: B-19 Sheet 1 of 1

Start Date: 7/18/2003 Finish Date: 7/18/2003

Casing Hammer Weight: _____ kg
Fall: _____ mm

Sampler Hammer Weight: 63.5 kg
Fall: 762 mm

Groundwater Observations
Date: 7/18/2003 Time: 2:00 PM Depth (m): Dry Casing at: 1.37

Ground Elev.: 183.49 m Boring Advance By: 10.7 cm Auger

Borehole caved at 0.6 meters.

DEPTH (meters)	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE		SAMPLE TYPE	BLOWS ON SAMPLER PER 152 mm 51-mm O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL	RECOVERY (mm)
			From	To					
1	AUGER	1	0.00	0.61	SS	2 8 16 35	0.2	20 cm TOPSOIL & ORGANIC MATERIAL	483
							0.5	Brown mft+ SAND; and ROCK FRAGMENTS; little SILT (moist, non-plastic)	
							0.6	Grey ROCK FRAGMENTS (moist, non-plastic)	
		2	0.61	0.76	SS	100	0.8	Grey ROCK FRAGMENTS (moist, non-plastic)	102
2								Grey ROCK FRAGMENTS (moist, non-plastic)	
			0.91	2.44	NX	RUN 1		Grey LIMESTONE	
							2.4	150cm or 90% Recovery 11 Pieces (99cm)-34% Chips and Fragments 5 Pieces longer than 10cm (74cm) - RQD - 48%	
3								Boring terminated at 2.4 meters.	
4								Note: 1. Boring backfilled upon completion with on-site soil. 2. Possible weathered rock at 0.5 meters.	
5									
6									

SS Split Spoon Sample
NX Rock Core
SH Undisturbed Sample (Shelby Tube)
Estimated Groundwater

Drillers: Robin Pryce; Zach Remington
Inspector: _____

ATL-LOG1, METRIC CD2251.GPJ ATL-WELL GDT 8/27/03

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Client: N.K. Bhandari Consulting Engineers
 Project: Subsurface Investigation
1st Brigade Barracks Expansion
Fort Drum, New York

Report No.: CD2251-7-03
 Boring Location: See Boring Location Plan

Boring No.: B-20 Sheet 1 of 1

Start Date: 7/18/2003 Finish Date: 7/18/2003

Casing Hammer Weight: _____ kg
 Fall: _____ mm
 Sampler Hammer Weight: 63.5 kg
 Fall: 762 mm

Groundwater Observations
 Date: 7/18/2003 Time: 1:00 PM Depth (m): Dry Casing at: 0.91

Ground Elev.: 183.49 m
 Boring Advance By: 10.7 cm Auger

Borehole caved at .30 meters.

DEPTH (meters)	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE		SAMPLE TYPE	BLOWS ON SAMPLER PER 152 mm 51-mm O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL	RECOVERY (mm)
			From	To					
1	AUGER	1	0.00	0.61	SS	2 10 18 18	0.2	8" TOPSOIL & ORGANIC MATERIAL	457
		2	0.61	0.85	SS	38 100/5 cm	0.9	Grey ROCK FRAGMENTS; little mf+ SAND; trace SILT (moist, non-plastic) Similar Soil	203
2								Boring terminated at 0.9 meters due to auger refusal, possible BEDROCK Note: 1. Boring backfilled upon completion with on-site soil. 2. Possible weathered rock at 0.5 meters.	
3									
4									
5									
6									

SS Split Spoon Sample
 NX Rock Core
 SH Undisturbed Sample (Shelby Tube)
 Estimated Groundwater

Drillers: Robin Pryce; Zach Remington
 Inspector: _____

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Client: N.K. Bhandari Consulting Engineers
 Project: Subsurface Investigation
1st Brigade Barracks Expansion
Fort Drum, New York

Report No.: CD2251-7-03
 Boring Location: See Boring Location Plan

Boring No.: B-21 Sheet 1 of 1

Start Date: 7/18/2003 Finish Date: 7/18/2003

Casing Hammer Weight: _____ kg
 Fall: _____ mm
 Sampler Hammer Weight: 63.5 kg
 Fall: 762 mm

Groundwater Observations
 Date: 7/18/2003 Time: 3:15 PM Depth (m): Dry Casing at: 1.52

Ground Elev.: 183.10 m
 Boring Advance By: 10.7 cm Auger

Borehole caved at 1.8 feet.

DEPTH (meters)	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE		SAMPLE TYPE	BLOWS ON SAMPLER PER 152 mm 51-mm O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL	RECOVERY (mm)
			From	To					
1	AUGER	1	0.00	0.61	SS	4 17 41 27	0.2	20 cm TOPSOIL & ORGANIC MATERIAL	584
							0.3	Brown mf+ SAND; little SILT; trace f GRAVEL; trace ORGANIC MATERIAL (roots); (moist, non-plastic)	
		2	0.61	1.22	SS	26 22 22 73		Grey ROCK FRAGMENTS (moist, non-plastic)	406
								Similar Soil	
		3	1.22	1.37	SS	102	1.2	Similar Soil	127
							1.5	Boring terminated at 1.5 meters due to auger refusal on possible bedrock.	
								Note: 1. Boring backfilled upon completion with on-site soil. 2. Possible weathered rock at 0.5 meters.	

SS Split Spoon Sample
 NX Rock Core
 SH Undisturbed Sample (Shelby Tube)
 Estimated Groundwater

Drillers: Robin Pryce; Zach Remington
 Inspector: _____

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Client: N.K. Bhandari Consulting Engineers
 Project: Subsurface Investigation
1st Brigade Barracks Expansion
Fort Drum, New York

Report No.: CD2251-7-03
 Boring Location: See Boring Location Plan

Boring No.: B-22 Sheet 1 of 1

Start Date: 7/31/2003 Finish Date: 7/31/2003

Casing Hammer Weight: _____ kg
 Fall: _____ mm
 Sampler Hammer Weight: 63.5 kg
 Fall: 762 mm

Groundwater Observations
 Date: 7/31/2003 Time: PM Depth (m): Dry Casing at: Out

Ground Elev.: 184.00 m
 Boring Advance By: 10.7 cm Auger

Borehole caved at 3.5 feet.

DEPTH (meters)	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE		SAMPLE TYPE	BLOWS ON SAMPLER PER 152 mm 51-mm O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL	RECOVERY (mm)
			From	To					
1	AUGER	1	0.00	0.61	SS	10 16 62 57	0.4	8 cm TOPSOIL & ORGANIC MATERIAL	432
		2	0.61	1.07	SS	50 64 100/13 cm	1.0	Grey ROCK FRAGMENTS (dry, non-plastic) Weathered BEDROCK Similar Soil	229
			1.22	2.74	NX	RUN 1	2.7	Grey LIMESTONE 135cm or 88% Recovery 11 Pieces (86cm) - 36% Chips and Fragments 3 Pieces longer than 10cm (36cm) - RQD = 23%	1346
3	NX CORE							Boring terminated at 2.7 meters.	
4								Note: 1. Boring backfilled upon completion with on-site soil. 2. Possible weathered rock at 0.3 meters.	
5									
6									

SS Split Spoon Sample
 NX Rock Core
 SH Undisturbed Sample (Shelby Tube)
 Estimated Groundwater

Drillers: Robin Pryce; Zach Remington
 Inspector: _____

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Client: N.K. Bhandari Consulting Engineers
 Project: Subsurface Investigation
1st Brigade Barracks Expansion
Fort Drum, New York

Report No.: CD2251-7-03

Boring Location: See Boring Location Plan

Boring No.: B-23 Sheet 1 of 1

Casing Hammer Weight: _____ kg
 Fall: _____ mm
 Sampler Hammer Weight: 63.5 kg
 Fall: 762 mm

Ground Elev.: 184.00 m
 Boring Advance By: 10.7 cm Auger

Start Date: 7/28/2003 Finish Date: 7/28/2003

Groundwater Observations
 Date: 7/28/2003 Time: 12:45 PM Depth (m): Dry Casing at: 1.16

Borehole caved at 2.7 feet.

DEPTH (meters)	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE		SAMPLE TYPE	BLOWS ON SAMPLER PER 152 mm 51-mm O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL	RECOVERY (mm)
			From	To					
1	AUGER	1	0.00	0.61	SS	2 4 3 5	0.1	13 cm TOPSOIL & ORGANIC MATERIAL	483
							0.6	Brown cmf+ SAND; some SILT; trace ORGANIC MATERIAL (roots); (saturated, non-plastic)	
		2	0.61	0.98	SS	8 20 50/3 cm		Grey ROCK FRAGMENTS (dry, non-plastic)	254
1.2								Boring terminated at 1.2 meters due to auger refusal on possible bedrock.	
								Note: 1. Boring backfilled upon completion with on-site soil. 2. Possible weathered rock at 0.7 meters.	
2									
3									
4									
5									
6									

SS Split Spoon Sample
 NX Rock Core
 SH Undisturbed Sample (Shelly Tube)
 Estimated Groundwater

Drillers: Mark Childs; Jim McCreedy
 Inspector: _____

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Client: N.K. Bhandari Consulting Engineers
 Project: Subsurface Investigation
1st Brigade Barracks Expansion
Fort Drum, New York

Report No.: CD2251-7-03
 Boring Location: See Boring Location Plan

Boring No.: B-24 Sheet 1 of 1

Casing Hammer Weight: _____ kg
 Fall: _____ mm
 Sampler Hammer Weight: 63.5 kg
 Fall: 762 mm

Ground Elev.: 184.60 m
 Boring Advance By: 10.7 cm Auger

Start Date: 8/1/2003 Finish Date: 8/1/2003

Groundwater Observations
 Date: 8/1/2003 Time: PM Depth (m): 0.91 Casing at: 0.91

Borehole caved at 0.9 meters.

DEPTH (meters)	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE		SAMPLE TYPE	BLOWS ON SAMPLER PER 152 mm 51-mm O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL	RECOVERY (mm)
			From	To					
1	AUGER	1	0.00	0.61	SS	3 7 9 14	0.2	6" TOPSOIL & ORGANIC MATERIAL	483
							0.6	Brown mf+ SAND; some SILT; trace ROCK FRAGMENTS; trace ORGANIC MATERIAL (moist, non-plastic)	
		2	0.61	0.70	SS	50/8 cm	0.7	Brownish-Grey ROCK FRAGMENTS; little cmf SAND; trace SILT (moist, non-plastic)	76
			0.91	2.44	NX	RUN 1	2.4	Grey LIMESTONE 157cm or 100% Recovery 26 Pieces (135cm) - 12% Chips and Fragments 2 Pieces longer than 10cm (58cm) - RQD = 38%	1524
2	NX CORE							Boring terminated at 2.4 meters.	
3								Note: 1. Boring backfilled upon completion with on-site soil.	
4									
5									
6									

SS Split Spoon Sample
 NX Rock Core
 SH Undisturbed Sample (Sheelby Tube)
 Estimated Groundwater

Drillers: Mark Childs; Jim McCreedy
 Inspector: _____

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Client: N.K. Bhandari Consulting Engineers
 Project: Subsurface Investigation
1st Brigade Barracks Expansion
Fort Drum, New York

Report No.: CD2251-7-03
 Boring Location: See Boring Location Plan

Boring No.: B-25 Sheet 1 of 1

Start Date: 7/28/2003 Finish Date: 7/28/2003

Casing Hammer Weight: _____ kg
 Fall: _____ mm
 Sampler Hammer Weight: 63.5 kg
 Fall: 762 mm

Groundwater Observations
 Date: 8/7/2003 Time: 4:00 PM Depth (m): 1.43 Casing at: 1.83

Ground Elev.: 184.60 m
 Boring Advance By: 10.7 cm Auger

DEPTH (meters)	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE		SAMPLE TYPE	BLOWS ON SAMPLER PER 152 mm 51-mm O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL	RECOVERY (mm)
			From	To					
1	AUGER	1	0.00	0.61	SS	1 14 45 18	0.1	13 cm TOPSOIL & ORGANIC MATERIAL	432
							0.6	Brown cmf+ SAND; little SILT; little ROCK FRAGMENTS; trace ORGANIC MATERIAL (roots); (wet, non-plastic)	
		2	0.61	0.67	SS	50/5 cm	0.9	Grey ROCK FRAGMENTS (moist, non-plastic)	51
2								Boring terminated at 0.9 meters due to auger refusal on possible bedrock.	
								Note:	
								1. Boring backfilled upon completion with on-site soil.	
								2. Possible weathered rock at 0.5 meters.	
3									
4									
5									
6									

SS Split Spoon Sample
 NX Rock Core
 SH Undisturbed Sample (Shelby Tube)
 Estimated Groundwater

Drillers: Mark Childs; Jim McCreedy
 Inspector: _____

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Client: N.K. Bhandari Consulting Engineers
 Project: Subsurface Investigation
1st Brigade Barracks Expansion
Fort Drum, New York

Report No.: CD2251-7-03
 Boring Location: See Boring Location Plan

Boring No.: B-26 Sheet 1 of 1

Casing Hammer Weight: _____ kg
 Fall: _____ mm
 Sampler Hammer Weight: 63.5 kg
 Fall: 762 mm

Ground Elev.: 185.50 m
 Boring Advance By: 10.7 cm Auger

Start Date: 8/4/2003 Finish Date: 8/4/2003

Groundwater Observations
 Date Time Depth (m) Casing at
8/1/2003 4:00 PM 1.43 1.83

Borehole caved at 1.62 meters.

DEPTH (meters)	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE		SAMPLE TYPE	BLOWS ON SAMPLER PER 152 mm 51-mm O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL		RECOVERY (mm)
			From	To				f - fine m - medium c - coarse	and - 35-50% some - 20-35% little - 10-20% trace - 0-10%	
1	AUGER	1	0.00	0.61	SS	2 3 3 3	0.2	18 cm TOPSOIL & ORGANIC MATERIAL		483
						0.6	Brown mf+ SAND; some SILT; trace ROCK FRAGMENTS; trace ORGANIC MATERIAL (moist, non-plastic)			
		2	0.61	1.13	SS	2 12 23 50/3	cm	Grey cmf SAND; and ROCK FRAGMENTS; little SILT (moist, non-plastic)		
2	NX CORE		1.83	3.35	NX	RUN 1	1.8	Grey LIMESTONE 122cm or 80% Recovery 11 Pieces (91cm) - 25% Chips and Fragments 5 Pieces longer than 10cm (58cm) - RQD = 38%		1219
3							3.4	Boring terminated at 3.4 meters.		
4								Note: 1. Boring backfilled upon completion with on-site soil. 2. Possible weathered rock at 1.0 meters.		
5										
6										

SS Split Spoon Sample
 NX Rock Core
 SH Undisturbed Sample (Shelby Tube)
 Estimated Groundwater

Drillers: Mark Childs; Jim McCreedy
 Inspector: _____

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Client: N.K. Bhandari Consulting Engineers
 Project: Subsurface Investigation
1st Brigade Barracks Expansion
Fort Drum, New York

Report No.: CD2251-7-03
 Boring Location: See Boring Location Plan

Boring No.: B-27 Sheet 1 of 1

Casing Hammer Weight: _____ kg
 Fall: _____ mm
 Sampler Hammer Weight: 63.5 kg
 Fall: 762 mm

Ground Elev.: 184.00 m
 Boring Advance By: 10.7 cm Auger

Start Date: 7/28/2003 Finish Date: 7/28/2003

Groundwater Observations
 Date: 7/28/2003 Time: 4:53 PM Depth (m): Dry Casing at: 0.91

Borehole caved at 0.4 meters.

DEPTH (meters)	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE		SAMPLE TYPE	BLOWS ON SAMPLER PER 152 mm 51-mm O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL		RECOVERY (mm)
			From	To				f - fine m - medium c - coarse	and some little trace	
	AUGER	1	0.00	0.55	SS	45 8 5 60/8 cm	0.5	Dark Brown mf+ SAND; and SILT; little ROCK FRAGMENTS; trace ORGANIC MATERIAL (roots); (wet, non-plastic)		406
1								Boring terminated at 0.5 meters due to auger refusal on possible bedrock.		
2								Note: 1. Boring backfilled upon completion with on-site soil.		
3										
4										
5										
6										

SS Split Spoon Sample
 NX Rock Core
 SH Undisturbed Sample (Shelby Tube)
 Estimated Groundwater

Drillers: Mark Childs; Jim McCreedy
 Inspector: _____

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Client: N.K. Bhandari Consulting Engineers
 Project: Subsurface Investigation
1st Brigade Barracks Expansion
Fort Drum, New York

Report No.: CD2251-7-03
 Boring Location: See Boring Location Plan

Boring No.: B-28 Sheet 1 of 1

Casing Hammer Weight: _____ kg
 Fall: _____ mm
 Sampler Hammer Weight: 63.5 kg
 Fall: 762 mm

Ground Elev.: 182.10 m

Boring Advance By:
10.7 cm Auger

Start Date: 7/30/2003 Finish Date: 7/30/2003

Groundwater Observations
 Date: 7/30/2003 Time: PM Depth (m): Dry Casing at: 1.16

DEPTH (meters)	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE		SAMPLE TYPE	BLOWS ON SAMPLER PER 152 mm 51-mm O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL	RECOVERY (mm)
			From	To					
1	AUGER	1	0.00	0.61	SS	2 6 5 50	0.4	10 cm TOPSOIL & ORGANIC MATERIAL	356
		2	0.61	0.91	SS	65 103	0.6	Brownish-Grey ROCK FRAGMENTS and mf+ SAND; little SILT; trace ORGANIC MATERIAL (moist, non-plastic)	
								Grey ROCK FRAGMENTS (dry, non-plastic) Weathered ROCK	152
							1.2	Boring terminated at 1.2 meters due to auger refusal on possible bedrock.	
								Note: 1. Boring backfilled upon completion with on-site soil. 2. Possible weathered rock at 0.5 meters.	

SS Split Spoon Sample
 NX Rock Core
 SH Undisturbed Sample (Shelby Tube)
 Estimated Groundwater

Drillers: Mark Childs; Jim McCreedy
 Inspector: _____

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Client: N.K. Bhandari Consulting Engineers
 Project: Subsurface Investigation
1st Brigade Barracks Expansion
Fort Drum, New York

Report No.: CD2251-7-03
 Boring Location: See Boring Location Plan

Boring No.: B-29 Sheet 1 of 1

Start Date: 7/30/2003 Finish Date: 7/30/2003

Casing Hammer Weight: _____ kg
 Fall: _____ mm
 Sampler Hammer Weight: 63.5 kg
 Fall: 762 mm

Groundwater Observations
 Date: 7/30/2003 Time: 2:15 PM Depth (m): Dry Casing at: 0.61

Ground Elev.: 179.40 m
 Boring Advance By: 10.7 cm Auger

DEPTH (meters)	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE		SAMPLE TYPE	BLOWS ON SAMPLER PER 152 mm 51-mm O.D. SAMPLER			DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL	RECOVERY (mm)
			From	To		2	3	50/6 cm			
1	AUGER	1	0.00	0.40	SS				0.2	15 cm TOPSOIL & ORGANIC MATERIAL	
									0.6	Brown cmf SAND; little SILT; trace ROCK FRAGMENTS; trace ORGANIC MATERIAL (wet, non-plastic) Boring terminated at 0.6 meters due to auger refusal on possible bedrock. Note: 1. Boring backfilled upon completion with on-site soil. 2. Possible weathered rock at 0.5 meters.	
2											
3											
4											
5											
6											

SS Split Spoon Sample
 NX Rock Core
 SH Undisturbed Sample (Shelby Tube)
 Estimated Groundwater

Drillers: Mark Childs; Jim McCreedy
 Inspector: _____

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Client: N.K. Bhandari Consulting Engineers
 Project: Subsurface Investigation
1st Brigade Barracks Expansion
Fort Drum, New York

Report No.: CD2251-7-03
 Boring Location: See Boring Location Plan

Boring No.: B-31 Sheet 1 of 1

Start Date: 7/29/2003 Finish Date: 7/29/2003

Casing Hammer Weight: _____ kg
 Fall: _____ mm
 Sampler Hammer Weight: 63.5 kg
 Fall: 762 mm

Groundwater Observations
 Date: 7/29/2003 Time: 11:30 AM Depth (m): Dry Casing at: 1.31

Ground Elev.: 182.60 m
 Boring Advance By: 10.7 cm Auger

DEPTH (meters)	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE		SAMPLE TYPE	BLOWS ON SAMPLER PER 152 mm 51-mm O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL	RECOVERY (mm)
			From	To					
	AUGER	1	0.00	0.61	SS	1 3 5 5		Brown mf+ SAND; some SILT; trace ROCK FRAGMENTS; trace ORGANIC MATERIAL (roots); (wet, non-plastic)	483
		2	0.61	0.76	SS	50/8 cm		Similar Soil	127
1							1.3	Boring terminated at 1.3 meters due to auger refusal on possible bedrock.	
2								Note: 1. Boring backfilled upon completion with on-site soil. 2. Possible weathered rock at 0.6 meters.	
3									
4									
5									
6									

SS Split Spoon Sample
 NX Rock Core
 SH Undisturbed Sample (Shelby Tube)
 Estimated Groundwater

Drillers: Mark Childs; Jim McCreedy
 Inspector: _____

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Client: N.K. Bhandari Consulting Engineers
 Project: Subsurface Investigation
1st Brigade Barracks Expansion
Fort Drum, New York

Report No.: CD2251-7-03
 Boring Location: See Boring Location Plan

Boring No.: B-32 Sheet 1 of 1

Start Date: 7/29/2003 Finish Date: 7/29/2003

Casing Hammer Weight: _____ kg
 Fall: _____ mm
 Sampler Hammer Weight: 63.5 kg
 Fall: 762 mm

Groundwater Observations
 Date: 7/29/2003 Time: 1:15 PM Depth (m): Dry Casing at: 0.85

Ground Elev.: 181.00 m
 Boring Advance By: 10.7 cm Auger

DEPTH (meters)	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE		SAMPLE TYPE	BLOWS ON SAMPLER PER 152 mm 51-mm O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL		RECOVERY (mm)
			From	To				f - fine m - medium c - coarse	and - 35-50% some - 20-35% little - 10-20% trace - 0-10%	
1	AUGER	1	0.00	0.61	SS	2 5 11 20	0.1	13 cm TOPSOIL & ORGANIC MATERIAL		381
								Brown mf+ SAND; some SILT; trace ROCK FRAGMENTS; trace ORGANIC MATERIAL (roots); (saturated, non-plastic)		
		2	0.61	0.70	SS	50/6 cm	0.7			76
							0.9	Grey ROCK FRAGMENTS; little mf+ SAND (saturated, non-plastic)		
								Boring terminated at 0.9 meters due to auger refusal on possible bedrock.		
								Note: 1. Boring backfilled upon completion with on-site soil. 2. Possible weathered rock at 0.6 meters.		
2										
3										
4										
5										
6										

SS Split Spoon Sample
 NX Rock Core
 SH Undisturbed Sample (Shelby Tube)
 Estimated Groundwater

Drillers: Mark Childs; Jim McCreedy
 Inspector: _____

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Client: N.K. Bhandari Consulting Engineers
 Project: Subsurface Investigation
1st Brigade Barracks Expansion
Fort Drum, New York

Report No.: CD2251-7-03
 Boring Location: See Boring Location Plan

Boring No.: B-33 Sheet 1 of 1

Casing Hammer Weight: _____ kg
 Fall: _____ mm
 Sampler Hammer Weight: 63.5 kg
 Fall: 762 mm

Ground Elev.: 181.50 m
 Boring Advance By: 10.7 cm Auger

Start Date: 7/29/2003 Finish Date: 7/29/2003

Groundwater Observations
 Date: 7/29/2003 Time: 2:45 PM Depth (m): Dry Casing at: 0.30

Borehole caved at .8 feet.

DEPTH (meters)	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE		SAMPLE TYPE	BLOWS ON SAMPLER PER 152 mm 51-mm O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL	RECOVERY (mm)
			From	To					
0.1	AUGER	1	0.00	0.24	SS	8 50/6 cm	0.1	8 cm TOPSOIL & ORGANIC MATERIAL (WOODCHIPS)	152
0.3							0.3	Grey ROCK FRAGMENTS; little cmf SAND: trace ORGANIC MATERIAL (Woodchips); (moist, non-plastic)	
1								Boring terminated at 0.3 meters.	
2								Note:	
3								1. Boring backfilled upon completion with on-site soil.	
4									
5									
6									

SS Split Spoon Sample
 NX Rock Core
 SH Undisturbed Sample (Shelby Tube)
 Estimated Groundwater

Drillers: Mark Childs; Jim McCreedy
 Inspector: _____

Atlantic Testing Laboratories, Limited
CD2251E-1-08-03
Table of Competent Bedrock Elevations

Boring	Ground Elevation (meters)	Depth of Competent Bedrock (meters)	Elevation of Competent Bedrock (meters)
B-16	183.61	1.5	182.1
B-17	183.40	1.5	181.9
B-18	183.40	1.2	182.2
B-19	183.49	0.8	182.7
B-20	183.49	0.9	182.6
B-21	183.10	1.5	181.6
B-22	184.00	1.0	183.0
B-23	184.00	1.2	182.8
B-24	184.60	0.7	183.9
B-25	184.60	0.9	183.7
B-26	185.50	1.8	183.7
B-27	184.00	0.5	183.5
B-28	182.10	1.2	180.9
B-29	179.40	0.6	178.8
B-30	180.40	0.5	179.9
B-31	182.60	1.3	181.3
B-32	181.00	0.9	180.1
B-33	181.50	0.3	181.2

ATTACHMENT #4
EXTERIOR PHOTOGRAPHS









ATTACHMENT #5
DRAWING INDEX

DRAWING INDEX

The following drawings are included with this RFP package and bound separately:


T-1	Title Page
C-1	Site Location Plan
C-2	Project Key Plan
C-3	Existing Conditions Plan 'A'
C-4	Existing Conditions Plan 'B' & 'C'
C-5	Site Layout Plan 'A'
C-6	Site Layout Plan 'B' & 'C'
C-7	Site Utility Plan 'A'
C-8	Site Utility Plan 'B' & 'C'
C-9	Site Grading Plan 'A'
C-10	Site Grading Plan 'B' & 'C'
A-1	Floor Plans
A-2	Elevations and Enlarged Commons Area Plans
A-3	Wall Sections and Details
A-4	Life/Fire Safety Design Analysis
A-5	Building Sections
A-6	Pavilion Details
M-1	Schematic Mechanical Plans

ATTACHMENT #6
SUSTAINABLE DESIGN - SPiRiT RATING

FINAL RFP SUBMISSION
1st BRIGADE BARRACKS
FORT DRUM, NEW YORK
SUSTAINABLE PROJECT RATING TOOL

Facility Points Summary

1.0 Sustainable Sites (S)		Score	12	Max 20
1.R1	<input type="checkbox"/> Erosion, Sedimentation and Water Quality Control	YES		[Required]
1.C1	<input type="checkbox"/> Site Selection	2		2
1.C2	<input type="checkbox"/> Installation/Base Redevelopment	2		2
1.C3	<input type="checkbox"/> Brownfield Redevelopment	0		1
1.C4	<input type="checkbox"/> Alternative Transportation	2		4
1.C5	<input type="checkbox"/> Reduced Site Disturbance	1		2
1.C6	<input type="checkbox"/> Stormwater Management	1		2
1.C7	<input type="checkbox"/> Landscape and Exterior Design to Reduce Heat Islands	0		2
1.C8	<input type="checkbox"/> Light Pollution Reduction	1		1
1.C9	<input type="checkbox"/> Optimize Site Features	1		1
1.C10	<input type="checkbox"/> Facility Impact	1		2
1.C11	<input type="checkbox"/> Site Ecology	1		1
			2	Max 5
2.C1	<input type="checkbox"/> Water Efficient Landscaping	1		2
2.C2	<input type="checkbox"/> Innovative Wastewater Technologies	0		1
2.C3	<input type="checkbox"/> Water Use Reduction	1		2
			6	Max 28
3.R1	<input type="checkbox"/> Fundamental Building Systems Commissioning	YES		[Required]
3.R2	<input type="checkbox"/> Minimum Energy Performance	YES		[Required]
3.R3	<input type="checkbox"/> CFC Reduction in HVAC&R Equipment	YES		[Required]
3.C1	<input type="checkbox"/> Optimize Energy Performance	4		20
3.C2	<input type="checkbox"/> Renewable Energy	0		4
3.C3	<input type="checkbox"/> Additional Commissioning	1		1
3.C4	<input type="checkbox"/> <<Deleted>>	---		
3.C5	<input type="checkbox"/> Measurement and Verification	1		1
3.C6	<input type="checkbox"/> Green Power	0		1
3.C7	<input type="checkbox"/> Distributed Generation	0		1
4.0 Materials and Resources (M)		Score	-6	Max 13
4.R1	<input type="checkbox"/> Storage & Collection of Recyclables	YES		[Required]
4.C1	<input type="checkbox"/> Building Reuse	0		3
4.C2	<input type="checkbox"/> Construction Waste Management	1		2
4.C3	<input type="checkbox"/> Resource Reuse	2		2
4.C4	<input type="checkbox"/> Recycled Content	1		2
4.C5	<input type="checkbox"/> Local/Regional Materials	1		2
4.C6	<input type="checkbox"/> Rapidly Renewable Materials	0		1
4.C7	<input type="checkbox"/> Certified Wood	1		1
5.0 Indoor Environmental Quality (IEQ) [Q]		Score	14	Max 17
5.R1	<input type="checkbox"/> Minimum IAQ Performance	YES		[Required]
5.R2	<input type="checkbox"/> Environmental Tobacco Smoke (ETS) Control	YES		[Required]
5.C1	<input type="checkbox"/> IAQ Monitoring	1		1
5.C2	<input type="checkbox"/> Increase Ventilation Effectiveness	1		1
5.C3	<input type="checkbox"/> Construction IAQ Management Plan	2		2
5.C4	<input type="checkbox"/> Low-Emitting Materials	3		4
5.C5	<input type="checkbox"/> Indoor Chemical and Pollutant Source Control	1		1
5.C6	<input type="checkbox"/> Controllability of Systems	2		2
5.C7	<input type="checkbox"/> Thermal Comfort	0		2
5.C8	<input type="checkbox"/> Daylight and Views	2		2
5.C9	<input type="checkbox"/> Acoustic Environment /Noise Control	1		1
5.C10	<input type="checkbox"/> Facility In-Use IAQ Management Plan	1		1

SPiRiT Sustainable Project Certification Levels		
SPiRiT Bronze		25 to 34 Points
SPiRiT Silver		35 to 49 Points
SPiRiT Gold		50 to 74 Points
SPiRiT Platinum		75 to 100 Points

This image shows a single sheet of white paper with horizontal blue or green ruling lines, typical of notebook paper. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

Content

NOTES	iii
1.0 Sustainable Sites	1
1.1.R1 Erosion, Sedimentation and Water Quality Control	
1.1.C1 Site Selection	
1.1.C2 Installation/Base Redevelopment	
1.1.C3 Brownfield Redevelopment	
1.1.C4 Alternative Transportation	
1.1.C5 Reduced Site Disturbance	
1.1.C6 Stormwater Management	
1.1.C7 Landscape and Exterior Design to Reduce Heat Islands	
1.1.C8 Light Pollution Reduction	
1.1.C9 Optimize Site Features	
1.1.C10 Facility Impact	
1.1.C11 Site Ecology	
2.0 Water Efficiency	9
2.1.C1 Water Efficient Landscaping	
2.1.C2 Innovative Wastewater Technologies	
2.1.C3 Water Use Reduction	
3.0 Energy and Atmosphere	11
3.1.R1 Fundamental Building Systems Commissioning	
3.1.R2 Minimum Energy Performance	
3.1.R3 CFC Reduction in HVAC&R Equipment	
3.1.C1 Optimize Energy Performance	
3.1.C2 Renewable Energy	
3.1.C3 Additional Commissioning	
3.1.C4 <<Deleted>>	
3.1.C5 Measurement and Verification	
3.1.C6 Green Power	
3.1.C7 Distributed Generation	
4.0 Materials and Resources	17
4.1.R1 Storage & Collection of Recyclables	
4.1.C1 Building Reuse	
4.1.C2 Construction Waste Management	
4.1.C3 Resource Reuse	
4.1.C4 Recycled Content	
4.1.C5 Local/Regional Materials	
4.1.C6 Rapidly Renewable Materials	
4.1.C7 Certified Wood	
5.0 Indoor Environmental Quality (IEQ).....	24
5.1.R1 Minimum IAQ Performance	
5.1.R2 Environmental Tobacco Smoke (ETS) Control	
5.1.C1 IAQ Monitoring	
5.1.C2 Increase Ventilation Effectiveness	
5.1.C3 Construction IAQ Management Plan	
5.1.C4 Low-Emitting Materials	
5.1.C5 Indoor Chemical and Pollutant Source Control	
5.1.C6 Controllability of Systems	
5.1.C7 Thermal Comfort	
5.1.C8 Daylight and Views	
5.1.C9 Acoustic Environment /Noise Control	
5.1.C10 Facility In-Use IAQ Management Plan	
6.0 Facility Delivery Process.....	32
6.1.C1 Holistic Delivery of Facility	
7.0 Current Mission.....	33
7.1.C1 Operation and Maintenance	
7.1.C2 Soldier and Workforce Productivity and Retention	
8.0 Future Missions.....	35
8.1.C1 Functional Life of Facility and Supporting Systems	
8.1.C2 Adaptation, Renewal and Future Uses	
Facility Points Summary – Barracks.....	37
Facility Points Summary Non-Barracks.....	39
SPiRiT Comment Sheet	41

NOTES

- 1) This Sustainable Project Rating Tool (SPiRiT) is derived from The U. S. Green Building Council LEED 2.0 (Leadership in Energy and Environmental Design) Green Building Rating System TM.
- 2) The SPiRiT numbering scheme parallels, but does not match LEED 2.0. LEED does not number major sections, which it calls 'Credit Categories,' ex. 'Sustainable Sites,' rather it numbers criteria or 'credits' within each major section. SPiRiT credit numbers match those of LEED where there is a 1:1 comparison. Where additional credits have been added they fall at the end of major sections.
- 3) The SPiRiT Credits all follow the format: Intent, Requirement and Technologies/Strategies. Intent: A statement of the primary goal for the credit; Requirement: Quantifiable conditions necessary to achieve stated intent; Technologies/Strategies: Suggested technologies, strategies and referenced guidance on the means to achieve identified requirements.
- 4) Projects are evaluated for each SPiRiT credit which are either 'Prerequisites' or result in a point score: Prerequisites: These credits are a statement of minimum requirements and must be met. No further points will be awarded unless the minimum is achieved. These credits are recognizable by an 'R' in the number scheme, ex. 1.R1, and a 'Reqd.' in the score column. Point Score: These credits are evaluated and result in a point score. Where the potential score is greater than 1, no partial points are granted.
- 5) SPiRiT Sustainable Project Certification Levels:
 - SPiRiT Bronze 25 to 34 Points
 - SPiRiT Silver 35 to 49 Points
 - SPiRiT Gold 50 to 74 Points
 - SPiRiT Platinum 75 to 100 Points
- 6) SPiRiT credits have been developed to address facility life cycle phases including programming, design, construction, and commissioning. Additional rating tools will be developed to address installation/base master planning and facilities operations and maintenance, rehabilitation, recycling, and disposal.
- 7) POC for U. S. Army Corps of Engineers:

Mr. Harry Goradia
U. S. Army Corps of Engineers
ATTN: CEMP-ET
441 G Street NW
Washington, DC 20314
Phone (202) 761-7170, FAX (202) 761-0633
Email harry.goradia@hq02.usace.army.mil
- POC for U. S. Army Installations:

Mr. John Scharl
U. S. Army Assistant Chief of Staff for Installation Management, Directorate of Facilities & Housing
ATTN: DAIM-FDF
7701 Telegraph Road, Bldg #2594 (Room 146B),
Alexandria, VA 22315-3800
Phone (703) 428-7614, FAX (703) 428-0197
Email scharja@hqda.army.mil
- 8) Sustainable Project Rating Tool (SPiRiT) Authors are:
 - Stephen N. Flanders (Lead), U. S. Army Engineering Research & Development Center (ERDC-CRREL)
 - Richard L. Schneider, U. S. Army Engineering Research & Development Center (ERDC-CERL)
 - Donald Fournier, U. S. Army Engineering Research & Development Center (ERDC-CERL)
 - Annette Stumpf, U. S. Army Engineering Research & Development Center (ERDC-CERL)
- 9) Army/USACE employees are members of the USGBC with membership privileges accessible via the USGBC web site, <http://www.usgbc.org>. For information on membership and access to available LEED resources to support use of SPiRiT and sustainable design in your projects, contact Richard Schneider at (217) 373-6752 or richard.l.schneider@erdc.usace.army.mil (Annette Stumpf at (217) 352-6511 ext. 7542 or annette.l.stumpf@erdc.usace.army.mil alternate).
- 10) For the latest information on SPiRiT and for access to guidance, tools and resources supporting sustainable design initiatives, visit the CERL 'Sustainable Design and Development Resource' website, <http://www.cecer.army.mil/SustDesign>. There you may also join the CERL Sustainable Design ListServ to be directly notified of information pertinent to sustainable design.
- 11) Comments: ☒ mark shown in the ratings box indicates suggested attainable points.
☒ mark shown in the ratings box indicates suggested points that may not, will not or cannot be attained suggested conveniently for this project.

1.0 Sustainable Sites

Score 20

1.R1

Erosion, Sedimentation, and Water Quality Control ⁽¹⁾

Reqd.

Intent: Control erosion and pollutants to reduce negative impacts on water and air quality.

Requirement: ☒ Design a site sediment and erosion control plan and a pollution prevention plan that conforms to best management practices in the EPA's Storm Water Management for Construction Activities, EPA Document No. EPA-833-R-92-001, Chapter 3, OR local Erosion and Sedimentation Control standards and codes, whichever is more stringent. The plan shall meet the following objectives:

- ☒ Prevent loss of soil during construction by storm water runoff and/or wind erosion, including protecting topsoil by stockpiling for reuse.
- ☒ Prevent sedimentation of storm sewer or receiving streams and/or air pollution with dust and particulate matter.
- ☒ Prevent hazardous material discharge into storm water systems.
- ☒ Prevent petroleum oils and lubricants (POL) discharge into storm water systems.

Technologies/
Strategies

The EPA standard lists numerous measures such as silt fencing, sediment traps, oil grit separators, construction phasing, stabilization of steep slopes, maintaining vegetated ground cover and providing ground cover that will meet this prerequisite.

Comment: REQUIRED COMPLIANCE

1.0 Sustainable Sites

continued

1.C1

Site Selection ⁽¹⁾

Intent: Avoid development of inappropriate sites and reduce the environmental impact from the location of a building on a site. Select site based on functional adjacencies/relationships and land use compatibility.

Requirement: ☒ Do not develop buildings on portions of sites that meet any one of the following criteria: 1

- ☒ Prime training or maneuver land.
- ☒ Land whose elevation is lower than 5 ft. above the 100-year flood elevation as defined by FEMA.
- ☒ Land that provides habitat for any species on the Federal or State threatened or endangered list.
- ☒ Within 100 feet of any wetland as defined by 40 CFR, Parts 230-233 and Part 22, OR as defined by local or state rule or law, whichever is more stringent.

☒ Select site based on functional adjacencies/relationships and land use compatibility. 1

- ☒ Select sites close to existing roads and utilities or use an existing structure to minimize the need for new infrastructure.
- ☒ Select site in area of high density.
- ☒ Site facilities based on the strength of their relationships to other facilities/land-uses to limit travel distances. The stronger the relationship/functional interaction, the closer the distance between two facilities.
- ☒ Select for distance to installation/base transit systems and access to pedestrian ways and bike paths.
- ☒ Select for development previously used or developed suitable and available sites.

Technologies /Strategies: Screen potential building sites for these criteria and/or ensure that these criteria are addressed by the designer during the conceptual design phase. Utilize landscape architects, ecologists, environmental engineers, civil engineers, and similar professionals for the screening process. New wetlands constructed as part of stormwater mitigation or other site restoration efforts are not affected by the restrictions of this prerequisite.

Comment: COMPLIANCE IS ATTAINABLE.

(1) Adapted material not reviewed or endorsed by U. S. Green Building Council.

1.0 Sustainable Sites

continued

1.C2 Installation/Base Redevelopment ⁽¹⁾

Intent: Channel development to installation/base cantonment areas with existing infrastructure, protecting greenfields and preserving habitat and natural resources.

Requirement: ~~1~~ ~~2~~ ☒ Increase localized density to conform to existing or desired density goals by utilizing sites that are located within existing cantonment areas of high development density. 1

Comment: THIS SITE IS LOCATED WITHIN EXISTING CANTONMENT AREAS OF THE POST AND MEETS DESIRED DENSITY.

☒ Select sites close to existing roads and utilities or use an existing structure to minimize the need for new infrastructure. ✖

Comment: THIS POINT CANNOT BE MET AS NEW INFRASTRUCTURE IS REQUIRED FOR THIS PROJECT.

Technologies /Strategies: During the site selection process give preference to previously developed sites with installation/base cantonment redevelopment potential such as facility reduction program cleared sites.

1.C3 Brownfield Redevelopment ⁽¹⁾

Intent: Rehabilitate damaged sites where development is complicated by real or perceived environmental contamination, reducing pressure on undeveloped land.

Requirement: ~~1~~ ~~2~~ ☒ Develop on a site classified as a brownfield and provide remediation as required by EPA's Brownfield Redevelopment program requirements OR Develop a brownfield site (a site that has been contaminated by previous uses). ✖

Technologies /Strategies: Screen potential damaged sites for these criteria prior to selection for rehabilitation.

Utilize EPA OSWER Directive 9610.17 and ASTM Standard Practice E1739 for site remediation where required.

Comment: THIS WORK DOES NOT INCLUDE A BROWNFIELD SITE IN ACCORDANCE WITH EPA'S DESIGNATION – THIS POINT IS NOT ATTAINABLE.

1.0 Sustainable Sites

continued

1.C4 Alternative Transportation ⁽¹⁾

Intent: Reduce pollution and land development impacts from automobile use.

Requirement: ~~1~~ ~~2~~ ☒ Locate building within ½ mile of installation/base transit systems. 1

Comment: PRESENTLY BASE HAS NO OVERALL POST TRANSIT SYSTEMS, HOWEVER, WHEN POST TRANSIT BECOMES AVAILABLE, IT WILL BE EXTENDED TO THIS DEVELOPMENT.

~~1~~ ~~2~~ ☒ Provide suitable means for securing bicycles, with convenient changing/shower facilities for use by cyclists, for 5% or more of building occupants. 1

Comment: 100% OF OCCUPANTS HAVE AVAILABLE SHOWER FACILITIES, THE DESIGN WILL INCLUDE MEANS FOR SECURING BICYCLES FOR 5% OF BUILDING OCCUPANTS.

~~1~~ ~~2~~ ☒ Locate building within 2 miles of alternative-fuel refueling station(s). X

Comment: THIS PROJECT DOES NOT MEET THIS REQUIREMENT.

☒ Size parking capacity not to exceed minimum installation/base cantonment requirements AND provide preferred parking for carpools or van pools capable of serving 5% of the building occupants, OR, add no new parking for rehabilitation projects AND provide preferred parking for carpools or van pools capable of serving 5% of the building occupants. X

Comment: THIS PROJECT DOES NOT MEET THIS REQUIREMENT.

Technologies /Strategies: Select sites near public installation/base transit served by safe, convenient pedestrian pathways.

(1) Adapted material not reviewed or endorsed by U. S. Green Building Council.

1.0 Sustainable Sites

continued

1.C5 Reduced Site Disturbance ⁽¹⁾

Intent: Conserve existing natural areas and restore damaged areas to provide habitat and promote biodiversity.

Requirement: ☒ On greenfield sites, limit site disturbance including earthwork and clearing of vegetation to 40 feet beyond the building perimeter, 5 feet beyond primary roadway curbs, walkways, and main utility branch trenches, and 25 feet beyond pervious paving areas that require additional staging areas in order to limit compaction in the paved area; OR, on previously developed sites, restore a minimum of 50% of the remaining open area by planting native or adapted vegetation. **1**

Comment: THE CONTRACTOR MUST MEET THE CLEAR WAY LIMITATIONS FOR THIS WORK.

☒ Reduce the development footprint (including building, access roads and parking) to exceed the installation/base's master plan local zoning's open space requirement for the site by 25% or in accordance with installation/base policy on open space set asides, whichever is greater. **X**

Comment: THIS PROJECT DOES NOT MEET THIS REQUIREMENT.

Technologies /Strategies: Note requirements on plans and in specifications. Establish contractual penalties for destruction of trees and site areas noted for protection. Reduce footprints by tightening program needs and stacking floor plans. Establish clearly marked construction and disturbance boundaries. Delineate laydown, recycling, and disposal areas. Use areas to be paved as staging areas. Work with local horticultural extension services, native plant societies, or installation/base agronomy staff to select indigenous plant species for site restoration and landscaping.

1.C6 Stormwater Management ⁽¹⁾

Intent: Limit disruption of natural water flows by minimizing storm water runoff, increasing on-site infiltration and reducing contaminants.

Requirement: Implement a stormwater management plan that results in:
☒ No net increase in the rate or quantity of stormwater runoff from undeveloped to developed conditions; OR, if existing imperviousness is greater than 50%, implement a stormwater management plan that results in a 25% decrease in the rate and quantity of stormwater runoff. **1**

Comment: COMPLIANCE IS ATTAINABLE.

☒ Treatment systems designed to remove 80% of the average annual post development total suspended solids (TSS), and 40% of the average annual post development total phosphorous (TP), by implementing Best Management Practices (BMPs) outlined in EPA's Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters (EPA-840-B-92-002 1/93). **X**

Comment: CONTRACT DOES NOT INCLUDE PROVISIONS FOR TREATMENT FOR POST DEVELOPMENT TOTAL SUSPENDED SOLIDS.

Technologies /Strategies: Significantly reduce impervious surfaces, maximize on-site stormwater infiltration, and retain pervious and vegetated areas. Capture rainwater from impervious areas of the building for groundwater recharge or reuse within building. Use green/vegetated roofs. Utilize biologically-based and innovative stormwater management features for pollutant load reduction such as constructed wetlands, stormwater filtering systems, bioswales, bioretention basins, and vegetated filter strips. Use open vegetated swales to reduce drainage velocity and erosion, reduce system maintenance, increase vegetative variety and support wildlife habitat where space permits.

1.0 Sustainable Sites

continued

1.C7 Landscape and Exterior Design to Reduce Heat Islands ⁽²⁾

Intent: Reduce heat islands (thermal gradient differences between developed and undeveloped areas) to minimize impact on microclimate and human and wildlife habitat.

Requirement: ☒ Provide shade (within 5 years) on at least 30% of non-roof impervious surface on the site, including parking lots, walkways, plazas, etc., OR, use light-colored/ high-albedo materials (reflectance of at least 0.3) for 30% of the site's non-roof impervious surfaces, OR place a minimum of 50% of parking space under-ground OR use open-grid pavement system (net impervious area of LESS than 50%) for a minimum of 50% of the parking lot area. **X**

Comment: THIS PROJECT WILL NOT MEET THIS REQUIREMENT.

☒ Use ENERGY STAR Roof compliant, high-reflectance AND lowemissivity roofing (initial reflectance of at least .65 and three-year-aged reflectance of at least .5 when tested in accordance with ASTM E408) for a minimum of 75% of the roof surface; OR, install a "green" (vegetated) roof for at least 50% of the roof area. **X**

Comment: THIS PROJECT WILL NOT MEET THIS REQUIREMENT.

Technologies /Strategies: Employ design strategies, materials, and landscaping designs that reduce heat absorption of exterior materials. Note albedo/reflectance requirements in the drawings and specifications. Provide shade (calculated on June 21, noon solar time) using native or climate tolerant trees and large shrubs, vegetated trellises, or other exterior structures supporting vegetation. Substitute vegetated surfaces for hard surfaces. Explore elimination of blacktop and the use of new coatings and integral colorants for asphalt to achieve light colored surfaces.

1.0 Sustainable Sites

continued

1.C8 Light Pollution Reduction ⁽¹⁾

Intent: Eliminate light trespass from the building site, improve night sky access, and reduce development impact on nocturnal environments.

Requirement: ✍ ✍ ☒ Do not exceed Illuminating Engineering Society of North America (IESNA) footcandle level requirements as stated in the Recommended Practice Manual: Lighting for Exterior Environments, AND design interior and exterior lighting such that zero direct-beam illumination leaves the building site. 1

Technologies /Strategies: Consult IESNA Recommended Practice Manual: Lighting for Exterior Environments for Commission Internationale de l'Eclairage (CIE) zone and pre and post curfew hour descriptions and associated ambient lighting level requirements. Ambient lighting for pre-curfew hours for CIE zones range between .01 footcandles for areas with dark landscapes such as parks, rural, and residential areas, and 1.5 footcandles for areas with high ambient brightness such as installation/base areas with high levels of nighttime activity. Design site lighting and select lighting styles and technologies to have a minimal impact off-site and minimal contribution to sky glow. Minimize lighting of architectural and landscape features. Exterior lighting should be consistent with security lighting requirements.

Comment: THIS REQUIREMENT CAN BE MET WITH MINIMUM IMPACT TO THE PROJECT.

1.C9 Optimize Site Features

Intent: Optimize utilization of the site's existing natural features and placement of man-made features on the site.

Requirement: ✍ ✍ ☒ Perform both of the following: 1

- ✍ Maximize the use of free site energy.
- ✍ Plan facility, parking and roadways to "fit" existing site contours and limit cut and fill.

Technologies /Strategies: Evaluate site resources to ascertain how each can enhance the proposed project and visa versa. Work to maximum advantage of the site's solar and wind attributes. Use landscaping to optimize solar and wind conditions and to contribute to energy efficiency; Locate and orient the facility on the site to optimize solar and wind conditions.

Comment: THE DESIGN ENCOURAGES PASSIVE SOLAR TECHNIQUES AND THE DESIGN HAS BEEN PLANNED TO "FIT" THE EXISTING SITE CONTOURS TO (AND) LIMIT(S) CUT AND FILL

1.0 Sustainable Sites

continued

1.C10 Facility Impact

Intent: Minimize negative impacts on the site and on neighboring properties and structures; avoid or mitigate excessive noise, shading on green spaces, additional traffic, obscuring significant views, etc.

Requirement: ☒ Cluster facilities to reduce impact, access distance to utilities and sufficient occupant density to support mass transit. 1

Comment: THE DESIGN IS SPECIFIED CLUSTERED TO ALLOW ATTAINMENT OF THIS REQUIREMENT.

☒ Collaborate with installation/base and community planners to identify and mitigate potential impacts of the project beyond site boundaries, and transportation planners to insure efficient public transport. 1

Comment: SEE 1.C4 – COMPLIANCE IS ATTAINABLE

Technologies /Strategies: Involve local/regional planners and community members in installation/base master planning processes. Recognize the context and the impact of a project beyond site boundaries, and integrate it with the larger installation/base/community context/land use.

1.C11 Site Ecology

Intent: Identify and mitigate all existing site problems including contamination of soil, water, and air, as well as any negative impacts caused by noise, eyesores, or lack of vegetation, enhancing or creating new site habitat.

Requirement: ☒ Develop site environmental management and mitigation plan. 1

Technologies /Strategies: Understand site and surrounding ecosystem interdependence and interconnectivity. Plan landscaping scheme to incorporate biodiversity. Preserve/enhance existing trees, hydrological features, ecosystems, habitats, and cultural resources. Increase the existence of healthy habitat for native species. Reintroduce native plants and trees where they have been destroyed by previous development.

Comment: A PLAN FOR SITE AND ENVIRONMENTAL MANAGEMENT AND “MITIGATIONS” IS POSSIBLE..

2.0 Water Efficiency

Score 5

2.C1 Water Efficient Landscaping ⁽²⁾

Intent: Limit or eliminate the use of potable water for landscape irrigation.

Requirement: ☒ Use high efficiency irrigation technology, OR, use captured rain or recycled site water to reduce potable water consumption for irrigation by 50% over conventional means.

X

Comment: THIS CONTRACT SHALL REQUIRE LIMITED OR ZERO USE OF POTABLE WATER FOR LANDSCAPING.

☒ Use only captured rain or recycled site water for an additional 50% reduction (100% total reduction) of potable water for site irrigation needs, OR, do not install permanent landscape irrigation systems.

1

Comment: PERMANENT LANDSCAPE IRRIGATION SYSTEMS ARE NOT INCLUDED IN THIS DESIGN .

Technologies /Strategies: Develop a landscaping water use baseline according to the methodology outlined in the LEED Reference Guide. Specify water-efficient, native or adapted, climate tolerant plantings. High efficiency irrigation technologies include micro irrigation, moisture sensors, or weather data based controllers. Feed irrigation systems with captured rainwater, gray water, or on-site treated wastewater.

2.C2 Innovative Wastewater Technologies ⁽²⁾

Intent: Reduce generation of wastewater and potable water demand, while increasing local aquifer recharge.

Requirement: ☒ Reduce the use of municipally provided potable water for building sewage conveyance by a minimum of 50%, OR, treat 100% of wastewater on site to tertiary standards.

X

Technologies /Strategies: Develop a wastewater baseline according to the methodology outlined in the LEED Reference Guide. Implement decentralized on-site wastewater treatment and reuse systems. Decrease the use of potable water for sewage conveyance by utilizing gray and/or black water systems. Non-potable reuse opportunities include, toilet flushing, landscape irrigation, etc. Provide advanced wastewater treatment after use by employing innovative, ecological, on-site technologies including constructed wetlands, a mechanical recirculating sand filter, or aerobic treatment systems.

Comment: ALL BUILDING SEWAGE INFLOW IS TO THE LOCAL MUNICIPAL SEWER . THERE IS NO OPPORTUNITY TO OBTAIN THIS REQUIREMENT .

2.0 Water Efficiency

continued

2.C3 Water Use Reduction ⁽¹⁾

Intent: Maximize water efficiency within buildings to reduce the burden on municipal water supply and wastewater systems.

Requirement: ~~1~~ ~~2~~ ☒ Employ strategies that in aggregate use 20% less water than the water use baseline calculated for the building (not including irrigation) after meeting Energy Policy Act (EPACT) of 1992 fixture performance requirements. **1**

Comment: PROVIDE AND DOCUMENT COMPLIANCE WITH THIS REQUIREMENT.

~~1~~ ~~2~~ ☒ Exceed the potable water use reduction by an additional 10% (30% total efficiency increase). **X**

Technologies /Strategies: Develop a water use baseline including all water consuming fixtures, equipment, and seasonal conditions according to methodology guidance outlined in the LEED Reference Guide. Specify water conserving plumbing fixtures that exceed Energy Policy Act (EPACT) of 1992 fixture requirements in combination with ultra high efficiency or dry fixture and control technologies. Specify high water efficiency equipment (dishwashers, laundry, cooling towers, etc.). Use alternatives to potable water for sewage transport water. Use recycled or storm water for HVAC/process make up water. Install cooling tower systems designed to minimize water consumption from drift, evaporation and blowdown.

Comment: THIS STRATEGY IS NOT CONSIDERED ATTAINABLE ALTHOUGH COMPLIANCE WOULD CERTAINLY BE ENCOURAGED TO TAKE ADVANTAGE OF THIS ELEMENT IF POSSIBLE.

3.0 Energy and Atmosphere

Score 28

3.R1 **Fundamental Building Systems Commissioning** ⁽¹⁾ **Reqd.**

Intent: Verify and ensure that fundamental building elements and systems are designed, installed and calibrated to operate as intended.

Requirement: ☒ Implement all of the following fundamental best practice commissioning procedures.

- ☒ Engage a commissioning authority.
- ☒ Develop design intent and basis of design documentation.
- ☒ Include commissioning requirements in the construction documents.
- ☒ Develop and utilize a commissioning plan.
- ☒ Verify installation, functional performance, training and documentation.
- ☒ Complete a commissioning report.

Technologies /Strategies: Introduce standards and strategies into the design process early, and then carry through selected measures by clearly stating target requirements in the construction documents. Tie contractor final payments to documented system performance. Perform additional commissioning in accordance with the DOE Building Commissioning Guide, Version 2.2. Refer to the LEED Reference Guide for detailed descriptions of required elements and references to additional commissioning guides. Specify pre-occupancy baseline IAQ testing at time of commissioning. Test for indoor air concentrations of CO, CO₂, total VOCs and particulates. Test to assure that adequate ventilation rates have been achieved prior to initial occupancy.

Comment: REQUIRED COMPLIANCE

3.R2 **Minimum Energy Performance** ⁽¹⁾ **Reqd.**

Intent: Establish the minimum level of energy efficiency for the base building and systems.

Requirement: ☒ Design to meet building energy efficiency and performance as required by TI 800-01 (Design Criteria).

Technologies /Strategies: Use building modeling and analysis techniques to establish and document compliance. ASHRAE/IESNA 90.1-1999 provides guidance for establishing building base case development and analysis. Refer to the LEED Reference Guide for a wide variety of energy efficiency strategy resources.

Use a professionally recognized and proven computer program or programs that integrate architectural features with air-conditioning, heating, lighting, and other energy producing or consuming systems. These programs will be capable of simulating the features, systems, and thermal loads used in the design. Using established weather data files, the program will perform 8760 hourly calculations. BLAST, DOE-2 or EnergyPlus are acceptable programs for these purposes.

Comment: REQUIRED COMPLIANCE

3.0 Energy and Atmosphere

continued

3.R3 CFC Reduction in HVAC&R Equipment ⁽²⁾ Reqd.

Intent: Reduce ozone depletion.

Requirement: ☒ ☐ ☐ Zero use of CFC-based refrigerants in new base building HVAC&R systems. When reusing existing base building HVAC equipment, complete a comprehensive CFC phaseout conversion.

Technologies /Strategies: Specify only non-CFC-based refrigerants in all base building HVAC&R systems.

Comment: REQUIRED COMPLIANCE.

3.C1 Optimize Energy Performance ⁽¹⁾

Intent: Achieve increasing levels of energy performance above the prerequisite standard to reduce environmental impacts associated with excessive energy use.

Requirement: ☒ ☐ ☐ Reduce design energy usage (DEU) compared to the energy use budget (EUB) in joules per square meter per year for regulated energy components as described in the requirements of Chapter 11 of the TI 800-01 (Design Criteria), as demonstrated by a whole building simulation. **20**

☐ 1 Point will be awarded for every reduction in design energy use of 2.5% for both new and existing facilities for a maximum score of 20 points.

Regulated energy components include HVAC systems, building envelope, service hot water systems, lighting and other regulated systems as defined by ASHRAE.

Technologies /Strategies: Develop and use building modeling and analysis techniques to establish a base case that meets the minimum prerequisite standard. ASHRAE/IESNA 90.1-1999 provides guidance for establishing building base case development and analysis. Perform interactive energy use analysis for selected design elements that affect energy performance and document compliance.

Unit of measure for performance shall be annual energy usage in joules per square meter. Life-Cycle energy costs shall be determined using rates for purchased energy, such as electricity, gas, oil, propane, steam, and chilled water and approved by the adopting authority. Refer to the LEED Reference Guide or Whole Building Design Guide for a wide variety of energy efficiency resources and strategies including conservation measures, electromechanical energy efficiency technologies (for example ground-source heat pumps), passive heating and cooling strategies, solar hot water, and daylighting.

Life-Cycle costing will be done in accordance with 10 CFR 436.

Consider installation of an Energy Management and Control System (EMCS), which is compatible with exiting installation systems to optimize performance. Use sensors to control loads based on occupancy, schedule and/or the availability of natural resources use (day light or natural ventilation).

Comment: AS A MINIMUM REDUCE DESIGN ENERGY USE BY 5.0% TO OBTAIN 4.0 POINTS UNDER THIS STRATEGY.

3.0 Energy and Atmosphere

continued

3.C2 Renewable Energy ⁽¹⁾

Intent: Encourage and recognize increasing levels of self-supply through renewable technologies to reduce environmental impacts associated with fossil fuel energy use.

Requirement: ☒ Supply a net fraction of the building's total energy use through the use of on-site renewable energy systems.

% of Total Annual Energy Usage in Renewables

5%

✖

10%

✖

15%

✖

20%

✖

Technologies /Strategies: Employ the use of on-site non-polluting-source renewable technologies contributing to the total energy requirements of the project. Consider and use high temperature solar and/or geothermal, photovoltaics, wind, biomass (other than unsustainably harvested wood), and bio-gas. Passive solar, solar hot water heating, groundsource heat pumps, and daylighting do not qualify for points under this credit. Credit for these strategies is given in Energy & Atmosphere Credit 1: Optimizing Energy Performance.

Comment: LOOK FOR WAYS TO MEET SUCH STRATEGIES, NONE NOW APPEAR ATTAINABLE WITHIN CURRENT DESIGN APPROACH.


(1) Adapted material not reviewed or endorsed by U. S. Green Building Council.

3.0 Energy and Atmosphere

continued

3.C3 Additional Commissioning ⁽²⁾

Intent: Verify and ensure that the entire building is designed, constructed, and calibrated to operate as intended.

Requirement:  In addition to the Fundamental Building Commissioning prerequisite, implement the following additional commissioning tasks:

1

1. Conduct a focused review of the design prior to the construction documents phase.
2. Conduct a focused review of the construction documents when close to completion.
3. Conduct a selective review of contractor submittals of commissioned equipment.
4. Develop a system and energy management manual.
5. Have a contract in place for a near-warranty end or post occupancy review.

Items 1, 2, and 3 must be performed by someone other than the designer.

Technologies /Strategies: Introduce standards and strategies into the design process early, and then carry through selected measures by clearly stating target requirements in the construction documents. Tie contractor final payments to documented system performance. Refer to the LEED Reference Guide for detailed descriptions of required elements and references to additional guidelines.

Comment: THIS STRATEGY SHOULD BE FULLY ATTAINABLE

(2)  U. S. Green Building Council. Used by permission.

3.0 Energy and Atmosphere

continued

3.C4

<< Deleted >> (1)

3.C5

Measurement and Verification ⁽¹⁾

Intent:

Provide for the ongoing accountability and optimization of building energy and water consumption performance over time.

Requirement: ~~✗~~ ~~✗~~



Comply with the installed equipment requirements for continuous metering as stated in Selected Measurement and Verification Methods - Option B: Retrofit Isolation of the US DOE's International Performance Measurement and Verification Protocol (IPMVP) for the following: **1**

- ~~✗~~ ~~✗~~ Lighting systems and controls.
- ~~✗~~ ~~✗~~ Constant and variable motor loads.
- ~~✗~~ ~~✗~~ Variable frequency drive (VFD) operation.
- ~~✗~~ ~~✗~~ Chiller efficiency at variable loads (kW/ton).
- ~~✗~~ ~~✗~~ Cooling load.
- ~~✗~~ ~~✗~~ Air and water economizer and heat recovery cycles.
- ~~✗~~ ~~✗~~ Air distribution static pressures and ventilation air volumes.
- ~~✗~~ ~~✗~~ Boiler efficiencies.
- ~~✗~~ ~~✗~~ Building specific process energy efficiency systems and equipment.
- ~~✗~~ ~~✗~~ Indoor water risers and outdoor irrigation systems.

Technologies
/Strategies:

Design and specify equipment to be installed in base building systems to allow for comparison, management, and optimization of actual vs. estimated energy and water performance. Employ building automation systems to perform M&V functions where applicable. Tie contractor final payments to documented M&V system performance and include in the commissioning report. Provide for ongoing M&V system maintenance and operating plan in building operations and maintenance manuals. Consider installation/base of an Energy Management and Control System (EMCS), which is compatible with exiting installation/base systems to optimize performance.

Comment: SHOULD BE COMPIANT WITH THESE STRATEGIES.

3.0 Energy and Atmosphere

continued

3.C6 Green Power ⁽¹⁾

Intent: Encourage the development and use of grid-source, renewable energy technologies on a net zero pollution basis.

Requirement: ☒ Engage in a two year contract to purchase the amount of power equal to projected building consumption generated from renewable sources that meet the Center for Resource Solutions (CRS) Green-E requirements.

X

Technologies /Strategies: Purchase power from a provider that guarantees a fraction of its delivered electric power is from net nonpolluting renewable technologies. Begin by contacting local utility companies. If the project is in an open market state, investigate Green Power and Power Marketers licensed to provide power in that state. Grid power that qualifies for this credit originates from solar, wind, geothermal, biomass, or low-impact hydro sources. Low-impact hydro shall comply with the Low Impact Hydropower Certification Program.

Comment: THESE STRATEGIES ARE INCONSISTENT WITH THE REQUIREMENTS OF THE PROJECT AND ON POST PROCUREMENT CIRCUMSTANCES.

3.C7 Distributed Generation

Intent: Encourage the development and use of distributed generation technologies, which are less polluting than gridsource energy.

Requirement: ☒ Reduce total energy usage and emissions by considering source energy implications and local cogeneration and direct energy conversion. Generate at least 50% of the building's projected annual consumption by onsite distributed generation sources.

1

Technologies /Strategies: Investigate the use of integrated generation and delivery systems, such as co-generation, fuel cells, microturbines and off-peak thermal storage.



Comment: THESE STRATEGIES ARE INCONSISTENT WITH THE DESIGN OPERATION OF THESE FACILITIES AND THE POST'S EXISTING CIRCUMSTANCES.

4.0 Materials and Resources

Score 13

4.R1 Storage & Collection of Recyclables ⁽¹⁾

Reqd.

Intent:	Facilitate the reduction of waste generated by building occupants that is hauled to and disposed of in landfills.
Requirement:  	Provide an easily accessible area that serves the entire building that is dedicated to the separation, collection and storage of materials for recycling including (at a minimum) paper, glass, plastics, and metals.
Technologies /Strategies:	Establish a waste management plan which meets requirements of the installation/base environmental and/or solid waste management plans in cooperation with users to encourage recycling. Reserve space for recycling functions early in the building occupancy programming process and show areas dedicated to collection of recycled materials on space utilization plans. Broader recycling support space considerations should allow for collection and storage of the required elements and newspaper, organic waste (food and soiled paper), and dry waste. When collection bins are used, bin(s) should be able to accommodate a 75% diversion rate and be easily accessible to custodial staff and recycling collection workers. Consider bin designs that allow for easy cleaning to avoid health issues.

Comment: REQUIRED COMPLIANCE

4.0 Materials and Resources

continued

4.C1

Building Reuse ⁽¹⁾

Intent:	Extend the life cycle of existing building stock, conserve resources, retain cultural resources, reduce waste, and reduce environmental impacts of new buildings as they relate to materials manufacturing and transport.		
Requirement:	Reuse large portions of existing structures during renovation or redevelopment projects		
✓ ✓	<input checked="" type="checkbox"/>	✓ Maintain at least 75% of existing building structure and shell (exterior skin and framing excluding window assemblies).	✗
	<input checked="" type="checkbox"/>	✓ Maintain an additional 25% (100% total) of existing building structure and shell (exterior skin and framing excluding window assemblies).	✗
✓ ✓	<input checked="" type="checkbox"/>	✓ Maintain 100% of existing building structure and shell AND 50% non-shell (walls, floor coverings, and ceiling systems).	✗
Technologies /Strategies:	Evaluate retention of existing structure. Consider facade preservation, particularly in installation /base areas. During programming and space planning, consider adjusting needs and occupant use patterns to fit within existing building structure and interior partition configurations. Identify and effectively address energy, structural, and indoor environmental (lead & asbestos) issues in building reuse planning and deconstruction documents. Percentage of reused non-shell building portions will be calculated as the total area (s.f.) of reused walls, floor covering, and ceiling systems, divided by the existing total area (s.f.) of walls, floor covering, and ceiling systems.		

Comment: NOT AVAILABLE TO NEW CONSTRUCTION PROJECTS

4.0 Materials and Resources

continued

4.C2 Construction Waste Management ⁽¹⁾

Intent: Divert construction, demolition, and land clearing debris from landfill disposal. Redirect recyclable material back to the manufacturing process.

Requirement: Develop and implement a waste management plan, quantifying material diversion by weight:

☒ Recycle and/or salvage at least 50% (by weight) of construction, demolition, and land clearing waste. 1

Comment: COMPLIANCE SHOULD BE ENCOURAGED TO PERSUE AND OBTAIN ACCEPTANCE OF THIS ELEMENT.

☐ X Recycle and/or salvage an additional 25% (75% total by weight) of the construction, demolition, and land clearing debris. 1
X

Comment: 75% ACHIEVEMENT FOR THIS ELEMENT IS NOT LIKELY TO BE OBTAINABLE WITHOUT HARDSHIP UNDER THIS CONTRACT.

Technologies /Strategies: Develop and specify a waste management plan which meets requirements of the installation/base environmental and/or solid waste management plans that identifies licensed haulers and processors of recyclables; identifies markets for salvaged materials; employs deconstruction, salvage, and recycling strategies and processes, includes waste auditing; and documents the cost for recycling, salvaging, and reusing materials. Source reduction on the job site should be an integral part of the plan.

The plan should address recycling of corrugated cardboard, metals, concrete brick, asphalt, land clearing debris (if applicable), beverage containers, clean dimensional wood, plastic, glass, gypsum board, and carpet; evaluate the cost-effectiveness of recycling rigid insulation, engineered wood products and other materials; hazardous materials storage and management; and participation in manufacturers' "take-back" programs to the maximum extent possible. Refer to the LEED Reference Guide for guidelines and references that provide waste management plan development and implementation support including model bid specifications.

4.0 Materials and Resources

continued

4.C3 Resource Reuse ⁽²⁾

Intent: Extend the life cycle of targeted building materials, reducing environmental impacts related to materials manufacturing and transport.

Requirement: ☒ Specify salvaged or refurbished materials for 5% of building materials. 1

☒ Specify salvaged or refurbished materials for 10% of building materials. 1

Technologies /Strategies: Commonly salvaged building materials include wood flooring/ paneling/cabinets, doors and frames, mantels, iron work and decorative lighting fixtures, brick, masonry and heavy timbers. See the LEED Reference Guide for calculation tools and guidelines. Determine percentages in terms of dollar value using the following steps:

1. Calculate total dollars* (see exclusions) of the salvaged or refurbished material.
2. Calculate total dollars (see exclusions) of all building materials.
3. Divide Step 1 by Step 2 to determine the percentage.

Exclusions: In total dollar calculations, exclude; labor costs; all mechanical and electrical material and labor costs; and project overhead and fees. *If the cost of the salvaged or refurbished material is below market value, use replacement cost to estimate the material value, otherwise use actual cost to the project.

Comment: 10% SALVAGE OR REFURBISHED MATERIALS SHOULD BE ATTAINABLE BY FOR THIS PROJECT. BECAUSE THESE BUILDINGS COULD BE SEQUESNTIALLY CONSTRUCED , FRAMEWORK FROM ONE PART OF THE CONSTRUCTION COULD BE REUSED , RECYCLED FOR USE IN OTHER PORTIONS OF THE CONSTRUCTION THUS REDUCING USE (OR PURCHASE) OF NEW (RAW) MATERIALS.

4.0 Materials and Resources

continued

4.C4

Recycled Content ⁽¹⁾

Intent: Increase demand for building products that have incorporated recycled content material, reducing the impacts resulting from extraction of new material.

Requirement: ☒ Specify a minimum of 25% of building materials that contain in aggregate a minimum weighted average of 20% post-consumer recycled content material, OR, a minimum weighted average of 40% post-industrial recycled content material. **1**

☒ Specify an additional 25% (50% total) of building materials that contain in aggregate, a minimum weighted average of 20% post consumer recycled content material, OR, a minimum weighted average of 40% postindustrial recycled content material. **X**

Technologies
Select products Specify building materials containing recycled content /Strategies: for a fraction of total building materials and materials with supporting information from the AIA Resource Guide or the EPA Environmentally Preferable Purchasing (EPP) Program. Common building materials and products with recycled content include; wall, partition, and ceiling materials and systems; insulation; tiles and carpets; cement, concrete, and reinforcing metals; structural and framing steel. For products/materials not listed, selection should be made on the basis of EPP criterion and/or:

☒ Toxicity;

☒ Embodied energy;

☒ Production use of water, energy and ozone depleting substances (ODSs);

☒ Production limits on toxic emissions and effluents;

☒ Minimal, reusable or recycled/recyclable packaging;

☒ Impact on indoor environmental quality (IEQ);

☒ Installation that limits generation of waste;

☒ Materials that limit waste generation over their life;

☒ EPA guideline compliance; and

☒ Harvested on a sustainable yield basis.

See the LEED Reference Guide for a summary of the EPA guidelines and calculation methodology guidelines. Determine percentages in terms of dollar value using the following steps:

1. Calculate total dollars (see exclusions) of the material that contain recycled content.
2. Calculate total dollars (see exclusions) of all building materials.
3. Divide Step 1 by Step 2 to determine the percentage.

Exclusions: Labor costs; all mechanical and electrical material and labor costs; project overhead and fees)

Comment: MEET THE INITIAL LEVEL FOR COMPLIANCE WITH THIS STRATEGY.

4.0 Materials and Resources

continued

4.C5 Local/Regional Materials ⁽²⁾

Intent: Increase demand for building products that are manufactured locally, reducing the environmental impacts resulting from transportation, and supporting the local economy.

Requirement: ~~1~~ ~~2~~ ☒ Specify a minimum of 20% of building materials that are manufactured regionally within a radius of 500 miles. 1

Comment: THIS ELEMENT IS ATTAINABLE

~~1~~ ~~2~~ ☒ Of these regionally manufactured materials, specify a minimum of 50% that are extracted, harvested, or recovered within 500 miles. X

Comment: SUGGEST THAT THE INITIAL LEVEL FOR COMPLIANCE IS ATTAINABLE, FULL COMPLIANCE IS CERTAINLY ENCOURAGED BUT NOT CREDITED AT THIS TIME

Technologies /Strategies: Specify and install regionally extracted, harvested, and manufactured building materials. Contact the state and local waste management boards for information about regional building materials. See the LEED Reference Guide for calculation methodology guidelines. Determine percentages in terms of dollar value using the following steps:

1. Calculate total dollars (see exclusions) of material that is locally or regionally manufactured.
2. Calculate total dollars (see exclusions) of all building materials.
3. Divide Step 1 by Step 2 to determine the percentage.

Exclusions: Labor costs; all mechanical and electrical material and labor costs; project overhead and fees.

4.C6 Rapidly Renewable Materials ⁽²⁾

Intent: Reduce the use and depletion of finite raw and long cycle renewable materials by replacing them with rapidly renewable materials.

Requirement: ~~1~~ ~~2~~ ☒ Specify rapidly renewable building materials for 5% of total building materials. X

Technologies /Strategies: Rapidly renewable resources are those materials that substantially replenish them-selves faster than traditional extraction demand (e.g. planted and harvested in less than a 10 year cycle) and do not result in significant biodiversity loss, increase erosion, air quality impacts, and that are sustainably managed. See the LEED Reference Guide for calculation methodology guidelines. Determine percentages in terms of dollar value using the following steps:






1. Calculate total dollars (see exclusions) of materials that are considered to be rapidly renewable.
2. Calculate total dollars (see exclusions) of all building materials.
3. Divide Step 1 by Step 2 to determine the percentage.

Exclusions: Labor costs; all mechanical and electrical material and labor costs; project overhead and fees.

Comment: 5% COMPLIANCE SHOULD BE ENCOURAGED (BUT NOT REQUIRED) TO BE ATTAINED .

4.C7 Certified Wood ⁽²⁾

Intent: Encourage environmentally responsible forest management.

Requirement:      Use a minimum of 50% of wood-based materials certified in accordance with the Forest Stewardship Council guidelines for wood building components including but not limited to framing, flooring, finishes, furnishings, and non-rented temporary construction applications such as bracing, concrete form work and pedestrian barriers. 1

Technologies /Strategies: Refer to the Forest Stewardship Council guidelines for wood building components that qualify for compliance to the requirements and incorporate into material selection for the project.

Comment: ADEQUATE MATERIAL AT OR EQUAL TO OTHER NON-APPROVED MATERIALS ARE AVAILABLE COMPLIANCE SHOULD BE ENCOURAGED .

Score 17

Reqd.

Technologies /Strategies:	<p>Include proactive design details that will eliminate some of the common causes of indoor air quality problems in buildings. Introduce standards into the design process early. Incorporate references to targets in plans and specifications. Ensure ventilation system outdoor air capacity can meet standards in all modes of operation. Locate building outdoor air intakes (including operable windows) away from potential pollutants/contaminant sources such as sporulating plants (allergens), loading areas, building exhaust fans, cooling towers, sanitary vents, dumpsters, vehicular exhaust, and other sources. Include operational testing in the building commissioning report. Design cooling coil drain pans to ensure complete draining. Include measures to control and mitigate radon buildup in areas where it is prevalent. Limit humidity to a range that minimizes mold growth and promotes respiratory health.</p>
---------------------------	---

Comment: REQUIRED COMPLIANCE.

Reqd.


Technologies /Strategies:	Prohibit smoking in the building and/or provide designated smoking areas outside the building in locations where ETS cannot reenter the building or ventilation system and away from high building occupant or pedestrian traffic.
---------------------------	--

Comment: REQUIRED COMPLIANCE.

continued

Intent:	Provide capacity for indoor air quality (IAQ) monitoring to sustain long term occupant health and comfort.	
Requirement:	<input checked="" type="checkbox"/> <input type="checkbox"/> Install a permanent carbon dioxide (CO ₂) monitoring system that provides feedback on space ventilation performance in a form that affords operational adjustments, AND specify initial operational set point parameters that maintain indoor carbon dioxide levels no higher than outdoor levels by more than 530 parts per million at any time.	1
Technologies /Strategies:	Install an independent system or make CO ₂ monitoring a function of the building automation system. Situate monitoring locations in areas of the building with high occupant densities and at the ends of the longest runs of the distribution ductwork. Specify that system operation manuals require calibration of all of the sensors per manufacturer recommendations but not less than one year. Include sensor and system operational testing and initial set point adjustment in the commissioning plan and report. Also consider periodic monitoring of carbon monoxide (CO), total volatile organic compounds (TVOCs), and particulates (including PM10).	

5.C2 Increase Ventilation Effectiveness ⁽²⁾

Intent:	Provide for the effective delivery and mixing of fresh air to building occupants to support their health, safety, and comfort.	
Requirement:	 For mechanically ventilated buildings, design ventilation systems that result in an air change effectiveness (E) greater than or equal to 0.9 as determined by ASHRAE 129-1997. For naturally ventilated spaces demonstrate a distribution and laminar flow pattern that involves not less than 90% of the room or zone area in the direction of air flow for at least 95% of hours of occupancy.	1
Technologies /Strategies:	Employ architectural and HVAC design strategies to increase ventilation effectiveness and prevent short-circuiting of airflow delivery. Techniques available include use of displacement ventilation, low velocity, and laminar flow ventilation (under floor or near floor delivery) and natural ventilation. Operable windows with an architectural strategy for natural ventilation, cross ventilation, or stack effect can be appropriate options with study of inlet areas and locations. See the LEED Reference Guide for compliance methodology guidelines.	

Page 25

5.0 Indoor Environmental Quality (IEQ)

continued

5.C3 Construction IAQ Management Plan (2)

Intent: Prevent indoor air quality problems resulting from the construction/renovation process, to sustain long term installer and occupant health and comfort.

Requirement: Develop and implement an Indoor Air Quality (IAQ) Management Plan for the construction and pre-occupancy phases of the building as follows:

- | | | | |
|------------|--|---|----------|
| <p>✍ ✍</p> | <p><input checked="" type="checkbox"/> ✍</p> | <p>During construction meet or exceed the minimum requirements of the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guideline for Occupied Buildings under Construction, 1995, AND protect stored on-site or installed absorptive materials from moisture damage, AND replace all filtration media immediately prior to occupancy (Filtration media shall have a Minimum Efficiency Reporting Value (MERV) of 13 as determined by ASHRAE 52.2-1999).</p> | <p>1</p> |
|------------|--|---|----------|

Comment: COMPLIANCE IS ATTAINABLE

- | | | | |
|------------|--|--|----------|
| <p>✍ ✍</p> | <p><input checked="" type="checkbox"/> ✍</p> | <p>Conduct a minimum two-week building flushout with new filtration media at 100% outside air after construction ends and prior to occupancy, OR, conduct a baseline indoor air quality testing procedure consistent with current EPA protocol for Environmental Requirements, Baseline IAQ and Materials, for the Research Triangle Park Campus, Section 01445.</p> | <p>1</p> |
|------------|--|--|----------|

Comment: COMPLIANCE IS ATTAINABLE.

Technologies /Strategies: Specify containment control strategies including protecting the HVAC system, controlling pollutant sources, interrupting pathways for contamination, enforcing proper housekeeping and coordinating schedules to minimize disruption. Specify the construction sequencing to install absorptive materials after the prescribed dry or cure time of wet finishes to minimize adverse impacts on indoor air quality. Materials directly exposed to moisture through precipitation, plumbing leaks, or condensation from the HVAC system are susceptible to microbial contamination. Absorptive materials to protect and sequence installation include; insulation, carpeting, ceiling tiles, and gypsum products. Appoint an IEQ Manager with owner's authority to inspect IEQ problems and require mitigation as necessary.

5.0 Indoor Environmental Quality (IEQ)

continued

5.C4 Low-Emitting Materials ⁽²⁾

Intent:	Reduce the quantity of indoor air contaminants that are odorous or potentially irritating to provide installer and occupant health and comfort.		
Requirement:	<input checked="" type="checkbox"/> ✓ Meet or exceed VOC limits for adhesives, sealants, paints, composite wood products , and carpet systems as follows:		1
✓ ✓	<input checked="" type="checkbox"/> ✓ Adhesives must meet or exceed the VOC limits of South Coast Air Quality Management District Rule #1168 by, AND all sealants used as a filler must meet or exceed Bay Area Air Resources Board Reg. 8, Rule 51.		1
✓ ✓	<input checked="" type="checkbox"/> ✓ Paints and coatings must meet or exceed the VOC and chemical component limits of Green Seal requirements.		1
✓ ✓	<input checked="" type="checkbox"/> ✓ Carpet systems must meet or exceed the Carpet and Rug Institute Green Label Indoor Air Quality Test Program.		1
✓ ✓	<input checked="" type="checkbox"/> ✓ Composite wood or agrifiber products must contain no added urea-formaldehyde resins.		1
Technologies /Strategies:	Evaluate and preferentially specify materials that are low emitting, non-irritating, nontoxic and chemically inert. Request and evaluate emissions test data from manufacturers for comparative products. Ensure that VOC limits are clearly stated in specifications, in General Conditions, or in each section where adhesives, sealants, coatings, carpets, and composite woods are addressed.		

Comment: THREE OUT OF THE FIVE AVAILABLE STRATEGIES SHOULD BE ATTAINABLE UNDER THE CONTRACT. THE A/E CONTRACTS SHALL BE ENCOURAGED TO PERSON SAME FOR A MINIMUM OF THREE OUT OF FIVE ELEMENTS FOR COMPLIANCE.

5.0 Indoor Environmental Quality (IEQ)

continued

5.C5 Indoor Chemical and Pollutant Source Control ⁽¹⁾

Intent: Avoid exposure of building occupants to potentially hazardous chemicals that adversely impact air quality.

Requirement: ☒ Design to minimize cross-contamination of regularly occupied areas by chemical pollutants:

- ☒ Employ permanent entryway systems (grills, grates, etc.) to capture dirt, particulates, etc. from entering the building at all high volume entryways, AND provide areas with structural deck to deck partitions with separate outside exhausting, no air recirculation and negative pressure where chemical use occurs (including housekeeping areas and copying/print rooms), AND provide drains plumbed for appropriate disposal of liquid waste in spaces where water and chemical concentrate mixing occurs.

Technologies /Strategies: Design to physically isolate activities associated with chemical contaminants from other locations in the building, providing dedicated systems to contain and remove chemical pollutants from source emitters at source locations. Applicable measures include eliminating or isolating high hazard areas; designing all housekeeping chemical storage and mixing areas (central storage facilities and janitors closets) to allow for secure product storage; designing copy/fax/printer/printing rooms with structural deck to deck partitions and dedicated exhaust ventilation systems; and including permanent architectural entryway system(s) to catch and hold particles to keep them from entering and contaminating the building interior.

Consider utilization of EPA registered anti-microbial treatments in carpet, textile or vinyl wall coverings, ceiling tiles or paints where microbial contamination is a concern. Utilize "breathable" wall finishes where circumstances require, to reduce moisture build-up and prevent microbial contamination. Minimize selection of fibrous materials, e.g. insulation, carpet and padding and flexible fabrics, whose exposed surfaces when exposed to the air stream or occupied space can contribute significant emissions and absorb and re-emit other contaminants over time.

Comment: COMPLIANCE IS ATTAINABLE.

5.0 Indoor Environmental Quality (IEQ)

continued

5.C6 Controllability of Systems ⁽²⁾

Intent:	Provide a high level of individual occupant control of thermal, ventilation, and lighting systems to support optimum health, productivity, and comfort conditions.		
Requirement:	<input checked="" type="checkbox"/>	Provide a minimum of one operable window and one lighting control zone per 200 s.f. for all occupied areas within 15 feet of the perimeter wall.	1
	<input checked="" type="checkbox"/>	Provide controls for each individual for airflow, temperature, and lighting for 50% of the non perimeter, regularly occupied areas.	1
Technologies /Strategies:	Provide individual or integrated controls systems that control lighting, airflow, and temperature in individual rooms and/or work areas. Consider combinations of ambient and task lighting control and operable windows for perimeter and VAV systems for non perimeter with a 1:1: 2 terminal box to controller to occupant ratio.		

Comment: COMPLIANCE FOR THIS ELEMENT SHOULD IS ATTAINABLE

5.C7 Thermal Comfort ⁽²⁾

Intent:	Provide for a thermally comfortable environment that supports the productive and healthy performance of the building occupants.		
Requirement:	<input checked="" type="checkbox"/>	Comply with ASHRAE Standard 55-1992, Addenda 1995 for thermal comfort standards including humidity control within established ranges per climate zone.	X
	<input checked="" type="checkbox"/>	Install a permanent temperature and humidity monitoring system configured to provide operators control over thermal comfort performance and effectiveness of humidification and/or dehumidification systems in the building.	X

Comment: WINTER HUMIDITY CONTROL IS NOT A PART OF THIS PROJECT.

Comment: "AND/OR" DEHUMIDIFICATION IS POSSIBLE WITH THE SUGGESTED SYSTEMS. RECOMMEND PURSUIT OF THIS ELEMENT.

Technologies /Strategies:	Integrated envelope and HVAC system design strategies that achieve thermal comfort conditions based on mean radiant temperature, local air velocity, relative humidity, and air temperature. Install and maintain a temperature and humidity monitoring system for key areas of the building (i.e., at the perimeter, and spaces provided with humidity control). This function can be satisfied by the building automation system. Specify in system operation manuals that all sensors require quarterly calibration. Include criteria verification and system operation in commissioning plan and report.		
---------------------------	--	--	--

continued

5.0 Indoor Environmental Quality (IEQ)

continued

5.C10 Facility In-Use IAQ Management Plan

Intent: Insure the effective management of facility air quality during its life.

Requirement: ☒ Perform all of the following:

- ☒ Develop an air quality action plan to include scheduled HVAC system cleaning.
- ☒ Develop an air quality action plan to include education of occupants and facility managers on indoor pollutants and their roles in preventing them.
- ☒ Develop an air quality action plan to include permanent monitoring of supply and return air, and ambient air at the fresh air intake, for carbon monoxide (CO), carbon dioxide (CO₂), total volatile organic compounds (TVOCs), and particulates (including PM₁₀).

Technologies /Strategies: Provide action plan for periodic system maintenance, monitoring, occupant/manager training.

Comment: COMPLIANCE IS ATTAINABLE.

6.0 Facility Delivery Process

Score 7

6.C1

Holistic Delivery of Facility

Intent:

Encourage a facility delivery process that actively engages all stakeholders in the design process to deliver a facility that meets all functional requirements while effectively optimizing tradeoffs among sustainability, first costs, life cycle costs and mission requirements.

Requirement: ~~✓~~ ~~✓~~

☒ ~~✓~~ Choose team leaders that are experienced in holistic delivery of facilities.

1

~~✓~~ ~~✓~~

☒ ~~✓~~ Train the entire team in the holistic delivery process. The team must include all stakeholders in the facility delivery, including the users, the contracting staff, the construction representatives, project manager, and design/engineering team members.

1

~~✓~~ ~~✓~~

☒ ~~✓~~ Identify project goals and metrics.

~~✓~~ ~~✓~~

☒ ~~✓~~ Plan and execute charrettes with team members at critical phases of the facility delivery.

1

~~✓~~ ~~✓~~

☒ ~~✓~~ Identify and resolve tradeoffs among sustainability, first costs, life cycle costs and mission requirements through charrettes and other collaborative processes.

2

~~✓~~ ~~✓~~

☒ ~~✓~~ Document required results for each phase of project deliverables that achieve the project goals and are measurable throughout the facility life span.

1

Technologies
/Strategies:

Develop performance specifications or choose competitive range of products that meet environmental criteria. Use automated modeling and analysis tools to assess site and facility design alternatives.

Conduct life-cycle cost analysis (LCCA) in the design process according to the Federal Facilities Council Technical Report, Sustainable Federal Facilities: A Guide To Integrating Value Engineering, Life Cycle Costing, and Sustainable Development, FFC # 142, 2000.

Conduct a full ecological assessment to include soil quality, water resources and flows, vegetation and trees, wildlife habitats and corridors, wetlands, and ecologically sensitive areas to identify the least sensitive site areas for development. Evaluate space utilization/functions to reduce overall space requirements, considering networking, flextime, flexi-place, dual-use, and other strategies to reduce space requirements/optimize facility size.

Comment: ESTABLISH REQUIRED STRATEGIES FOR ATTAINMENT OF THESE ELEMENTS THROUGH REGULAR TIMELY AND EFFECTIVE PARTNERING, INSTRUCTIONS AND VALUE ENGINEERING AT EACH CRITICAL PHASE OF THE FACILITY DELIVERY.

7.0 Current Mission

Score 6

7.C1

Operation and Maintenance

Intent: Encourage the development of a facility delivery process that enhances efficient operation and maintenance of the facility.

Requirement: ☒ Develop a facility operations and maintenance program to include: 1

- ☒ Commissioning instructions for all facility systems.
- ☒ Comprehensive facility operations and maintenance instructions for system operation, performance verification procedures and results, an equipment inventory, warrantee information, and recommended maintenance schedule. The instructions should include a comprehensive, preventive maintenance program to keep all facility systems functioning as designed.
- ☒ A periodic training program for occupants, facilities managers, and maintenance staff in all facility operations and maintenance activities.
- ☒ Instructions on sustainable cleaning and pest control practices.
- ☒ Develop a comprehensive site/facility recycling/waste management plan.

☒ Provide surfaces, furnishings, and equipment that are appropriately durable, according to life cycle cost analysis. 1

Technologies /Strategies: Maintain facility elements, systems and subsystems on a routine maintenance schedule to ensure integrity and longevity.

Perform scheduled cleaning and maintenance activities with nontoxic environmentally preferable cleaning products and procedures. Keep air ducts clean and free of microorganisms through a structured program of preventive maintenance. Clean lighting systems following a regular maintenance schedule to ensure optimum light output and energy efficiency.

Use pesticides and herbicides sparingly and only when necessary with preference to natural methods and materials over poisons and toxic agents.

Use automated monitors and controls for energy, water, waste, temperature, moisture, and ventilation monitors and controls. Turn off the lights, computers, computer monitors, and equipment when not in use. Enable powerdown features on office equipment.

Comment: COMPLIANCE IS ATTAINABLE.

7.0 Current Mission

continued

7.C2

Soldier and Workforce Productivity and Retention

Intent:	Provide a high-quality, functional, healthy and safe work environment to promote soldier and workforce productivity and retention.		
Requirement:	<input checked="" type="checkbox"/>	Provide a high quality indoor environment to enhance user/occupant quality of life (QOL).	1
	<input checked="" type="checkbox"/>	Provide a highly functional work environment to promote user/occupant work productivity.	1
	<input checked="" type="checkbox"/>	Provide a healthy and safe work environment to sustain QOL and productivity.	1
Technologies /Strategies:	<p>Use a registered/certified interior designer to provide stimulating interior environments with pleasant colors, surface treatments, room proportions and ceiling heights, external views, natural lighting, and quality detailing for interior furnishings, equipment, materials and finishes. Use IES standards to provide light to occupied space with variations in level, comfortable contrasts, natural color rendition, natural/man-made, and adequate controls to optimize light aesthetic qualities. Provide occupant control of individual work areas configuration, and lighting, thermal and ventilation systems.</p> <p>Collaborate with end users to identify functional and technical requirements and to perform adjacency studies. Configure occupied space to address the specific workers/occupants functions and activities that will be carried out there. Meet TI 800-01 Design Guide requirements. Design and configure occupied space, and select furniture and equipment using human ergonomics. Identify existing user amenities, such as dining, recreation, socialization, shopping and child care facilities. Identify what amenities should be incorporated into the project or provided in the future, nearby facility. Provide ventilation air in sufficient volume free from natural and man made contaminants.</p>		

Comment: COMPLIANCE IS ATTAINABLE.

8.0 Future Missions

Score 4

8.C1

Functional Life of Facility and Supporting Systems

Intent: Assess the functional life of a facility and its supporting systems to optimize the infrastructure investment.

Requirement: ~~✓~~ ☒ ~~✓~~ Identify how long the designed function is likely to occupy the current facility. 1

~~✓~~ ☒ ~~✓~~ Identify how long the envelope, structure, HVAC, plumbing, communications, electrical, and other systems are likely to last before requiring replacement or upgrade. Consider economic, functional and physical obsolescence. 1

Technologies /Strategies: Assess the typical or likely lifespan of the function(s) to be accommodated to forecast eventual adaptation to a different use(s). Assess the life spans of the various building systems/components to forecast their revision/replacement during the facility lifespan and design in a manner that facilitates revision/replacement.

Consider the life span of the weapon systems, doctrines, or other programs supported by the facility.

Use life cycle data and other sources to identify the life span of the embodied systems.

Comment: COMPLIANCE IS ATTAINABLE.

8.0 Future Missions

continued

8.C2 Adaptation, Renewal and Future Uses

Intent: Encourage facility design that is responsive to change over time to maximize accommodation of future uses without creating waste and insuring maximum useful life of products.

- Requirement: ~~✓~~ ~~✓~~ ☒ ~~✓~~ Identify possible future uses for the facility; consider alternatives that expand the list of possible future uses. AND Design the building to accommodate as wide a range of future uses, as practical. AND Design the installation of building systems to accommodate foreseeable change with a minimum amount of disruption, cost, and additional materials. 1

Comment: COMPLIANCE IS ATTAINABLE.

- ~~✓~~ ~~✓~~ ☒ ~~✓~~ Build the smallest facility necessary to meet current mission functional requirements, using the most efficient shape and form, while taking into consideration expansion capabilities and potential future mission requirements. AND Design the facility for recycling of materials and systems. 1

Comment: COMPLIANCE IS ATTAINABLE.

Technologies /Strategies: Create durable, long-lasting and adaptable facility shell and structural system. Create an adaptable, flexible facility design using open planning, service corridors, interstitial space, access floors, demountable walls/partitions, modular furniture and other adaptable space configuration/utilization strategies.

Select materials that are recyclable, avoiding composite materials, such as reinforced plastics and carpet fibers and backing. Consider selecting materials and labeling construction materials with identification information to facilitate recycling. Use pre-cut/pre-fabricated materials and use standard lengths and sizes (dimensional modularity) in design. Design facility systems and subsystems for reconfiguration and/or disassembly/recycling using reversible/reusable connectors.